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PART IV

DEPARTMENT OF TRANSPORTATION

Coast Guard

■

MOBILE OFFSHORE DRILLING UNITS

Requirements

DEPARTMENT OF TRANSPORTATION

Coast Guard

[46 CFR Parts 50, 54, 56, 58, 61, 107, 108, 109]

[CGD 73-251]

REQUIREMENTS FOR MOBILE OFFSHORE DRILLING UNITS

AGENCY: Coast Guard, DOT.

ACTION: Proposed rules.

SUMMARY: The Coast Guard is proposing regulations for the inspection and certification, design and equipment, and operation of mobile offshore drilling units, including regulations for industrial systems. Mobile offshore drilling units have previously been subject to various regulations depending on whether they float while engaged in drilling operations, or whether they drill while bearing on the seabed. These proposed regulations will bring all mobile offshore drilling units under one set of uniform, comprehensive reguations, and will provide that all units be inspected and certificated by the Coast Guard.

DATES: 1. Comments must be received on or before June 29, 1977. 2. Public Hearing: The Coast Guard will hold a public hearing commencing on June 1, 1977, at 9:00 a.m., in Meeting Rooms 2 and 3, The Rivergate, 4 Canal Street, New Orleans, Louisiana 70130.

ADDRESSES: Comments should be submitted to Commondant (G-CMC/81), U.S. Coast Guard, Washington, D.C. 20590. Comments will be available for examination at the Marine Safety Council (G-CMC/81), Room 8117, Department of Transportation, Nassif Building, 400 Seventh Street SW., Washington, D.C. 20590. Copies of the Navigation and Vessel Inspection Circular addressing the inspection and certification of existing units reference in this document are available for examination at the above address. A copy of the economic evaluation from which the economic summary in this document is taken is also available for examination at the above address.

FOR FURTHER INFORMATION CONTACT:

Captain George K. Greiner, Marine Safety Council (G-CMC/81), Room 8117, Department of Transportation, Nassif Building, 400 Seventh Street SW., Washington, D.C. 20590 (202-426-1477).

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in this ruelmaking by submitting written data, views, or arguments. Written comments should include the docket number (CGD 73-251), the name and address of the person submitting the comments, and the specific section of the proposal to which each comment is addressed. The proposal may be changed in light of comments received before final action on this proposal. Interested persons are invited to attend the hearing and present oral or written statements on this proposal. It is requested that anyone desiring to make comments notify Captain Greiner at least 10 days before the scheduled date of the public hearing and specify the approximate length of time needed for the presentation. It is urged that a written summary or copy of the oral presentation be included with the request.

Discussion of the Proposed Regulations

General Discussion

These proposed regulations are applicable to all types of mobile offshore drilling units. Units which float while engaged in drilling operations have been inspected and certificated by the Coast Guard under the regulations in 46 CFR Subchapter I, Rules and Regulations for Cargo and Miscellaneous Vessels. Those which drill while bearing on the seabed have been subject to the regulations in 33 CFR Subchapter N, Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf.

In 1967, the Coast Guard began discussions with the offshore drilling industry to bring bottom bearing units under inspection. In Federal Register Document 87-71, the Coast Guard published proposed rulemaking to inspect bottom bearing mobile drilling units under Subchapter I, Title 46 CFR, Rules and Regulations for Cargo and Miscellaneous Vessels. This was followed by a public hearing in March 1972. All comments received in response to the public rulemaking proceedings were negative and almost unanimous in stating that many of the provisions in Subchapter I were inappropriate for mobile offshore drilling units and in recommending that a separate set of regulations be developed for these unique vessels. Upon evaluation of the comments, the Coast Guard agreed that application of existing regulations to these vessels would result in inconsistencies and would require considerable improvisation during the inspection process. The Coast Guard, therefore, withdrew the Notice of Proposed Rulemaking in May 1972.

In the development of this proposal, the Coast Guard has met at various times, beginning in 1973, with members of the Mobile Offshore Drilling Unit Subcommittee of the National Offshore Operations Industry Advisory Committee (NOOIAC). The Advisory Committee submitted is recommendations to the Coast Guard on November 19, 1976. These recommendations were taken into consideration in the preparation of this proposal.

As previously stated, the regulations in this proposal will be applied to new units. An "existing unit" under the proposed regulations is considered to be a unit which was in existance or contracted for as a mobile offshore drilling unit prior to the effective date of the final rule. All other units will be considered new units and be required to comply with the new regulations.

"Existing units" will fall into two general categories as follows:

(1) Those units which drill while in a floating condition. These units are presently inspected and certificated under the provisions of Subchapter I of Title 46 CFR, Rules and Regulations for Cargo and Miscellaneous Vessels.

(2) Those units which drill while bearing on the seabed. These units are currently subject to the regulations in Subchapter N of Title 33 CFR, Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf, and are not issued Certificates of Inspection by the Coast Guard.

It is not practical to prescribe detailed standards for all existing units which would correct unsafe conditions or bring certain equipment up to present day standards and yet provide the flexibility required by the variety of designs and arrangements. The Coast Guard does not intend to prohibit the use of an existing unit simply because its design and construction do not conform to the minimum standards that will be required for new units. To provide the necessary flexibility, a draft Navigation and Vessel Inspection Circular addressing the inspection and certification of existing units is being prepared.

This proposal does not address manning standards or the licensing and certification of officers and seaman for mobile offshore drilling units. These matters will be addressed by the Coast Guard in separate regulatory proposals.

In addition, this proposal does not address electrical equipment standards for industrial systems aboard mobile offshore drilling units. This matter is being addressed by the Coast Guard in a separate regulatory proposal revising 46 CFR Subchapter J—Electrical Engineering Regulations.

This proposal does not address either the actual drilling operation and procedures or control of the subsea well. It is the intent of the Coast Guard to regulate the "industrial" (drilling) system on mobile offshore drilling units to the extent necessary to assure an acceptable level of safety for the unit and the personnel on board. On the Outer Continental Shelf of the U.S., drilling operations conducted by mobile offshore drilling units and subsea well control equipment and procedures are subject to regulation and monitoring by the U.S. Department of Interior, U.S. Geological Survey. Similarly in waters adjacent to other coastal nations where U.S. mobile offshore drilling units may operate, the actual drilling operation is subject to control by the government of that coastal state.

Discussion of Specific Proposals

The proposed regulations are generally self-explanatory. However, the proposed Subchapter II is based on the provisions of 46 CFR Subchapter I, Rules and Regulations for Cargo and Miscellaneous Vessels, with additional provisions appropriate for mobile offshore drilling units added and inappropriate segments of Subchapter I not included. All provisions taken from Subchapter I to be included in the proposed new subchapter have been drafted in a new, less complex format and the entire subchapter has been organized into only three parts: Part

107—Inspection and Certification, Part 108—Design and Equipment, and Part 109—Operations.

Items which represent a significant departure from the provisions of existing regulations (Subchapter I), as currently applied to inspected units, are discussed in the following paragraphs.

For existing uninspected bottom bearing units, all of the provisions of this proposal, with the exception of certain provisions concerning lifesaving equipment, firefighting equipment, guards and rails, station bill and a general alarm system, differ from the regulations currently applied to these units (33 CFR Subchapter N, Rules and Regulations for Artificial Islands and Fixed Structures on The Outer Continental Shelf). This is not intended to imply that existing bottom bearing units do not meet many of the provisions of Subchapter I currently applied to existing inspected units. Although bottom bearing units have not been inspected as vessels by the Coast Guard, they were in fact constructed as vessels and many of them do meet the rules of, and are classed by, the American Bureau of Shipping, or another classification society. Existing inspected units, on the other hand, are required to be constructed in accordance with the applicable rules of the American Bureau of Shipping.

Proposed §§ 107.259 and 107.260 establish requirements for inspection and testing of the material handling cranes that are installed aboard all units. These installations have not been subject to the cargo gear provisions of Subchapter I, being specifically excluded in the definition of cargo gear.

Proposed §§ 107.265 and 107.267 provide for a special examination, in lieu of drydocking, for large column stabilized and self-elevating units. The Coast Guard previously published guidelines for such special examination for large column stabilized units in Navigation and Vessel Inspection Circular 12–69. The provisions of this circular have been incorporated into the proposed regulations. Since the hull of a self-elevating unit is above the water surface and reasonably accessible for inspection during most of the vessel's life, the Coast Guard has concluded that these units should also be given some special consideration in regard to drydocking requirements. Therefore, provisions for a special examination in lieu of drydocking are included for self-elevating units.

Proposed § 108.185 establishes requirements for ventilation of enclosed classified areas. This subject is not addressed in regulations currently applied to mobile offshore drilling units.

Proposed § 108.201 allows the berthing of up to six temporary industrial personnel in one accommodation space. Present regulations limit the maximum number of persons in a space to four. This provision is considered desirable because mobile offshore drilling units often have several service company personnel aboard in addition to their normal personnel complement.

Proposed § 108.209 provides an alternative to the large, dedicated hospital space historically required on seagoing vessels. This provision recognizes that mobile offshore drilling units do not often engage in long ocean voyages, and that transportation to shore is normally available within a reasonable time.

Proposed §§ 108.231 through 108.241 prescribe requirements for helicopter facilities aboard mobile offshore drilling units. These facilities are not covered by existing reguations. The proposal includes requirements for location and size, construction, fuel storage facilities, fuel transfer equipment, and visual aids.

Sections 108.301 through 108.343 provide stability requirements for mobile offshore drilling units in detail rather than the general requirements existing in Subchapter I. The Coast Guard feels that due to the unique operations of mobile offshore drilling units and their various configurations, detailed stability requirements are essential. A requirement for an operating manual including stability information is in the proposal.

Proposed Subpart E of Part 108, Firefighting Equipment, contains requirements similar to existing requirements in Subchapter I, and proposes fire protection requirements for helicopter facilities.

Proposed Table 108.495(a) establishes requirements for hand portable and semi-portable fire extinguishers in areas unique to mobile offshore drilling units including helicopter facilities, the drill floor, and cranes powered by internal combustion engines.

Proposed § 108.497 establishes requirements for an oxygen and explosive meter approved by, Underwriters' Laboratory or Factory Mutual Laboratory as a part of the required fireman's outfits.

Proposed Subpart F of Part 108, Lifesaving Equipment, differs from existing regulations in that the basic standards which now apply only to self-propelled units will be extended to all units. Proposed § 108.503 establishes the requirement that all units be equipped with enough covered, motor propelled lifeboats for 100 percent of the persons on board, and proposed § 108.505 requires enough inflatable liferafts for 100 percent of the persons on board. Existing regulations allow the substitution of inflatable liferafts for lifeboats on all non-self-propelled vessels of over 100 gross tons. This substitution will no longer be permitted since, from a lifesaving viewpoint, there is no significant difference between self-propelled and non-self-propelled mobile offshore drilling units and since, on a drilling location, mobile offshore drilling units have the maximum number of person on board and are subject to the hazards peculiar to the drilling operation as well as to the normal hazards of the marine environment. The term "lifeboat" as used in this proposal means all types of hard hulled motor propelled survival craft approved by the Coast Guard including the type usually referred to as a "survival capsule".

Although the proposal would require either davit launched or throw over type inflatable liferafts for 100 percent of the persons on board, further consideration is being given to requiring davit launching equipment for the required inflatable life rafts. This would provide escape backup in case of damage or malfunction. Tests have been conducted on such launching equipmnt, a sea trial is anticipated soon in the Gulf of Mexico, and the equipment is installed on fixed structures in the North Sea. Approval specifications for launching equipment will be proposed in the FEDERAL REGISTER soon under Docket No. CGD 75–217. Comments on this subject are specifically requested.

The proposal has a requirement for liferaft operation instruction and periodic drills. Analysis of casualties and discussions of IMCO Subcommittee on Life Saving Appliances and the Society of Naval Architects and Mariner Engineers, Life Saving Equipment Panel 0–25 indicate, that improved training would have a significant effect on success of abandonment operations. Considerations is being given to requiring more definite instructions. A manual for each crew member is being considered. Comments and recommendations on the general subject of training and the content of such a manual are specifically requested.

Proposed § 108.517(b) extends the requirement for a line throwing appliance to all non-self-propelled units. This provision is considered desirable because units are almost always attended by smaller supply vessels or tugs in all weather conditions.

Proposed § 108.601 establishes design criteria for the material handling cranes. As noted previously, these installations are exempted from inspection under current regulations.

Proposed §§ 108.611 through 108.615 establish requirements for power operated industrial trucks aboard units. The use of power operated industrial trucks aboard units differs greatly from their use aboard cargo vessels, where most operations take place in cargo holds. The proposed requirements are therefore considerably less complicated than the requirements currently existing in Subchapter I.

Proposed § 108.661 modifies existing draft mark requirements to take into consideration the various configurations of units.

Proposed Part 109 sets forth operating rules which are already applied to mobile offshore drilling units, together with additions which have been made to cover operations peculiar to the offshore oil drilling industry. Included are new operating rules concerning personnel working over the water, crane operations, power industrial truck operation, storage and handling of hazardous materials, and helicopter refueling operations.

This proposal would also amend 46 CFR Subchapter F—Marine Engineering Regulations, to establish requirements for certain industrial systems and components aboard mobile offshore drilling units. Industrial systems and components aboard mobile offshore drilling units are not specifically addressed in existing regulations except in 46 CFR 54.01–16. Significant subjects addressed in this portion of the proposal include the following.

Proposed § 50.15–20(a) (13) provides for Coast Guard recognition of appropriate standards or recommended practices promulgated by the American Petroleum Institute.

Section 54.01–16 has been revised to propose requirements for Class I, II and III pressure vessels installed as components in industrial systems on mobile offshore drilling units, including those used for the storage of compressed gases, including air. Although pressure vessels in these classes which meet the full requirements of Table 54.01–5(b) would still be accepted, the standards proposed in the revised § 54.01–16 are considered sufficient. It should be noted that the postweld heat treatment and minimum joint and radiographic requirements of Table 54.01–5(b) would still apply, but that pressure-relief devices that meet subpart 54.15 would also be required. Class I–L and II–L pressure vessels would continue to be governed by Table 54.01–5(b).

The Coast Guard is of the opinion that the current practice of simply accepting ASME Code stamping could lead to a reduction in the reliability of pressure vessels used in industrial systems below the level required of other pressure vessels on drilling units. The Coast Guard feels that the hazards associated with higher pressures (over 200 p.s.i.) and lower temperatures (below 0°F) must be minimized. This can best be assured by combing the tight material control and design criteria of the ASME Code with those requirements of Table 54.01–5(b) which would be extended to pressure vessels in industrial systems by the proposed revision of § 54.01–16. This revision would also affect pressure vessels used for the storage of compressed gases, including air, by eliminating the current provision which subjects them to plan approval and shop inspection by the Coast Guard. Thus, while the ASME Code has very board application, the specifies outlined in the proposal would clearly define the scope of the Code's applicability. Furthermore, the Coast Guard intends to monitor this proposed pressure vessel acceptance program closely, with a view toward the possible extension of a similar program to all shipboard pressure vessels.

Proposed Subpart 58.60 was developed to address the industrial systems which are installed on mobile offshore drilling units for use exclusively in conducting drilling operations. These systems are not specifically addressed in existing regulations and are generally not constructed to the same standards as vessel machinery systems. The present Coast Guard approach to industrial systems has been inconsistent due to broadly worded exclusions in Parts 54 and 56 of Title 46, CFR Subchapter F—Marine Engineering Regulations.

The industrial systems specifically addressed in the proposed subpart are the cementing system, circulation system (mud pumps, mud piping, shale shaker, desander and degasser), blowout preventor control system, riser and guideline tensioning system, motion compensation system, bulk material (dry cement, barite) storage and handling system, and other pressurized systems necessary to the performance of the design function of the unit.

The proposed regulations would require that the blowout prevention control system meet API RP 53, Recommended Practice for Blowout Protection Equipment Systems.

The proposed regulations would require all industrial piping systems to comply with ANSI B31.3—Refinery Piping, and additionally require that all industrial systems be evaluated in a manner similar to that presented in API RP 14C. This specification is a safety analysis of the impact of a failure in the system on the operation of the system and the unit, on the operations of proximate personnel, and on the ecology. It includes methods of preventing or limiting the effects of failure. It would fill any voids that may exist in the simple application of a standard. The design would be certified by a registered professional engineer as complying with B31.3. The safety analysis would also be certified. All pressure vessels used as components of the system would be required to meet the proposed § 54.01–46. The Coast Guard would reserve the right to spot check or review these systems in their entirety. The Coast Guard would inspect the installation.

The proposal would, for the specified industrial system, assure compliance with known standards, remove the Coast Guard from complete plan approval procedure for these systems, and permit an allowable stress of ⅓ the specified minimum tensile strength, and the utilization of a broader range of materials.

The Coast Guard does not consider it necessary to specify marine engineering standards for other non-pressurized, mechanical or structural industrial systems and components such as the drilling derrick, draworks, and rotary table. The proposal includes the provision that these systems may comply with standards or specifications not specifically referenced in the regulations. Any standards or specifications used for these systems will be required to be indicated on the plans, or in the specifications, for the unit.

Economic Summary

This proposed rule has been reviewed for economic effects under Department of Transportation "Policies to Improve Analysis and Review of Regulations" (41 FR 16200) and determined to be a nonmajor proposal. The analysis considered the economic effect on both government and industry. In evaluating the effect on industry it was necessary to consider the effect of the proposal on both existing mobile offshore drilling units and new units that will be constructed under the provisions of the new regulations.

For the approximately 142 existing U.S. units, the total cost of the proposal to industry is estimated at $12,249,000. Since all existing units will be allowed two years to comply with applicable provisions of the proposal, the estimated annual cost is $6,124,500. The following factors were taken into consideration in arriving at the above estimates: preparation and submittal of plans, lifesaving equipment update, firefighting equipment update, load line assignments, preparation of operating manuals, testing of cranes, marine sanitation requirements, and miscellaneous inspection requirements.

It is estimated that ten new U.S. mobile offshore drilling units will be built each year for the next two to three years, although this number may vary depending on U.S. government policy regarding development of the Outer Continental Shelf. For new units, the cost effect of this proposal will be the cost of differences in requirements between the proposal and existing regulations. This cost was estimated at $249,300 per unit or $2,493,000 per year, taking the following factors into consideration: additional plan preparation and submittal, additional equipment (including lifesaving and firefighting), crane certification and testing, helicopter facility requirements, load line assignments, operating manual expansion, requirements for industrial (drilling) systems, and arrangement/construction requirements.

The proposal requires Coast Guard inspection and certification of all mobile offshore drilling units, including approximately 87 existing units not currently under inspection. To accomplish the proposed requirements for all units, additional Coast Guard personnel will be required. Estimated personnel requirements are 18 officers and two civilians at an estimated cost of $654,000 per year. Considering all of the above, the estimated total cost of the proposal is $9,271,500 a year for the first two years and $3,147,000 per year there after.

The major benefit of the proposal will be the establishment of a uniform, comprehensive set of regulations for all types of mobile offshore drilling units operating under the flag of the United States. This will further U.S. efforts at the Intergovernmental Maritime Consultative Organization (IMCO) where the United States is the lead nation in the development of an international code for mobile offshore drilling units. It will also facilitiate the employment of U.S. units on a worldwide basis inasmuch as the coastal nations concerned can be assured that the units meet established safety standards. The proposal adds new or expanded safety requirements for mobile offshore drilling units including requirements for cranes, helicopter facilities, classified areas, stability, lifesaving and firefighting equipment, industrial (drilling) systems and operating rules. It is anticipated that this proposal will result in an improvement in safety in these areas.

Drafting Information

The principal project manager and lawyer involved in the drafting of this rulemaking are: Commander Kenneth F. Bishop, Jr., Project Manager, and Lieutenant Edward J. Gill, Jr., Project Attorney.

In consideration of the foregoing, it is proposed that Chapter 1 of Title 46 of the Code of Federal Regulations be amended as follows:

PART 50—GENERAL PROVISIONS

1. By adding a new paragraph (j) to § 50.01–1 to read as follows:

§ 50.01–1 Authority for regulations.

* * * * *

(j) *Mobile offshore drilling units.* The citation regarding authority to prescribe requirements for mobile offshore units is in Subchapter II of this chapter.

2. By adding a new paragraph (e) to § 50.05–1 to read as follows:

§ 50.05–1 General.

* * * * *

(e) Industrial systems and components on mobile offshore drilling units must meet § 54.01–16 and Subpart 58.60 of this chapter.

3. By adding a new paragraph (b) to § 50.05–10 to read as follows:

§ 50.05–10 Alterations or repairs.

* * * * *

(b) When alterations or repairs are made to a U.S. vessel in a port or place not in the United States, a notice containing details of the proposed alterations or repairs must be submitted to the appropriate Officer in Charge, Marine Inspection.

4. By adding the words ", mobile offshore drilling units," after the words "nautical schoolships" in the first sentence of § 50.05–15(a).

5. By adding new paragraph (a)(13) to § 50.15–20 to read as follows:

§ 50.15–20 Additional standards.

(a) * * *

(13) American Petroleum Institute (API), 1201 L Street, Washington, D.C. 20037.

* * * * *

PART 54—PRESSURE VESSELS

6. By revising § 54.01–16 to read as follows:

§ 54.01–16 Mobile offshore drilling units: pressure vessels for industrial systems.

A Class I, II, or III pressure vessel which is a component in an industrial system under Subpart 58.60 of this chapter must—

(a) Be stamped "U" under Section VIII of the ASME Code;

(b) Meet the postweld heat treatment and the minimum joint and radiographic requirements of Table 54.01–5(b); and

(c) Have pressure-relief devices that meet Subpart 54.15 of this chapter.

NOTE 1.—Class I, II, or III pressure vessels which are components in industrial systems and which meet Table 54.01–5(b) in full will also be accepted.

NOTE 2.—Class I–L and II–L pressure vessels must meet the shop inspection and plan approval requirements of Table 54.01–5(b) and are not accepted under § 54.01–16.

PART 56—PIPING SYSTEMS AND APPURTENANCES

7. By revising § 56.01–1(c) to read as follows:

§ 56.01–1 Scope (replaces 100.1).

* * * * *

(c) Piping for industrial systems on mobile offshore drilling units must meet Subpart 58.60 of this chapter.

8. By adding a new paragraph (d–1) to follow paragraph (d) in § 56.01–10 to read as follows:

§ 56.01–10 Plan approval.

* * * * *

(d–1) Plans of piping for industrial systems on mobile offshore drilling units must be submitted under Subpart 58.60 of this chapter.

* * * * *

9. By adding the words ", Section 108.417 of Subchapter I–A (Mobile Offshore Drilling Units)," after the words "Subchapter H (Passenger Vessels)" in the second sentence of § 56.50–10(b).

10. By striking the words "crew and passenger quarters" in the first sentence of § 56.50–15(h) and inserting the words "accommodation spaces" in place thereof.

11. By adding the footnote "(4)" to follow footnote "(1)" in § 56.50–50(d)(1).

12. By adding the footnote "(3)" to follow footnote "(2)" in § 56.50–50(d)(2).

13. By adding Notes 3 and 4 to follow Notes 1 and 2 in § 56.50–50(d)(2) to read as follows:

§ 56.50–50 Bilge and ballast piping.

(d) * * *

(2) * * *

NOTE 3.—In the calculation for a vessel with more than one hull such as a catamaran, the breadth of the unit is the breadth of one hull.

NOTE 4.—In the calculation for a mobile offshore drilling unit, "L" is reducible by the combined length of spaces that can be pumped by another piping system meeting §§ 56.50–50 and 56.50–55, where "L" is the length of the unit at the waterline.

14. By adding the following two sentences to follow the last sentence in § 56.50–50(e):

"In a vessel with more than one hull, there must be one bilge pump that has an independent bilge suction in each hull. In a column stabilized mobile offshore drilling unit, the independent bilge suction must be from the pumproom bilge."

15. By adding new paragraphs (f)(5) and (6) to § 56.50–50 to read as follows:

§ 56.50–50 Bilge and ballast piping.

* * * * *

(f) * * *

(5) Each vessel with more than one hull must have an emergency bilge suction in each hull.

(6) Each column stabilized mobile offshore drilling unit[1] must have—

(i) An emergency bilge suction in each hull; and

(ii) A remote control for the emergency pump and associated valves that can be operated from the ballast control room.

* * * * *

16. By adding a fourth category of vessel to Table 56.50–50(a) to read as follows:

TABLE 56.50–55(a).—*Power bilge pumps required for self-propelled vessels*

Vessel length, in feet	* * *	Mobile offshore drilling units all waters
180 or more	* * *	2
Below 180 and exceeding 65	* * *	2
65 or less	* * *	2

* * * * *

17. By adding a fourth category of vessel to Table 56.50–55(b)(1), to read as follows:

TABLE 56.50–55(b)(1).—*Bilge pumps required for non-self-propelled vessels*

Type of vessel	Waters navigated	Power pumps[1]	Hand pumps
*	*	*	*
Mobile offshore drilling units.	All waters	2	None.
*	*	*	*

[1] For the purpose of this section, a pumproom is a machinery space on a column stabilized unit.

18. By amending § 56.50–55 by adding new paragraph (a)(6) to follow paragraph (a)(5) and new paragraph (b)(3) to follow paragraph (b)(2) to read as follows:

§ 56.50–55 Bilge pumps.

(a) * * *

(6) Each hull of a vessel with more than one hull such as a catamaran must meet Table 56.50–55(a).

(b) * * *

(3) Each hull of a vessel with more than one hull, such as a catamaran, must meet Table 56.50–55(b).

* * * * *

19. By adding a new paragraph (e)(4) to § 56.50–55 to read as follows:

§ 56.50–55 Bilge pumps.

* * * * *

(e) * * *

(4) Each hull of a vessel with more than one hull must have at least two means for pumping the bilges in each hull. No vessel may operate unless one of these means is available to pump the bilge.

* * * * *

PART 58—MAIN AND AUXILIARY MACHINERY AND RELATED SYSTEMS

20. By amending Subpart 58.03 by adding a new § 58.03–35 to read as follows:

§ 58.03–35 American Petroleum Institute (API).

The standards of the American Petroleum Institute (API)[1] that are referred to in this part are hereby adopted.

21. By adding new paragraphs (c) and (d) to § 58.10–10 to read as follows:

§ 58.10–10 Diesel engine installations.

* * * * *

[1] See § 50.15–20(a)(13) for the address of API.

(c) A diesel engine air intake on a mobile offshore drilling unit must not be in a hazardous location.[1]

(d) A diesel engine exhaust on a mobile offshore drilling unit must not discharge into a hazardous location.[1]

22. By adding a new paragraph (c)(4) and revising paragraph (d) in § 58.10–15 to read as follows:

§ 58.10–15 Gas turbine installations.

* * * * *

(c) * * *

(4) A gas turbine exhaust on a mobile offshore drilling unit must not discharge in a hazardous location.[1]

(d) *Air inlets.* Air inlets on a mobile offshore drilling unit must be designed as follows:

(1) Each air inlet must have means to protect the safety of life and to prevent the entrance of harmful foreign material, including water, into the system.

(2) A gas turbine air inlet must not be in a hazardous location.[1]

* * * * *

23. By amending Subchapter F by adding a new Subpart 58.60 to read as follows:

Subpart 58.60—Industrial Systems and Components on Mobile Offshore Drilling Units (MODU)

Sec.

58.60–1 Applicability.
58.60–3 Pressure vessel.
58.60–5 Industrial systems: locations.
58.60–7 Industrial systems: piping.
58.60–9 Industrial systems: design.
58.60–11 Analyses, plans, diagrams and specification: submission.
58.60–13 Inspection.

§ 58.60–1 Applicability.

This subpart applies to the following industrial systems on board a mobile offshore drilling unit (MODU):

(a) Cementing systems.

(b) Circulation systems, including—

(1) Pipes and pumps for mud;

(2) Shale shakers;

(3) Desanders; and

(4) Degassers.

(c) Blow out preventor control systems.

(d) Riser and guideline tensioning systems.

(e) Motion compensation systems.

(f) Bulk material storage and handling systems.

(g) Other pressurized systems designed for the MODU's industrial operations.

§ 58.60–3 Pressure vessel.

A pressure vessel that is a component in an industrial system under this subpart must meet § 54.01–16.

§ 58.60–5 Industrial systems: locations.

An industrial system under this subpart must not be in a space that is—

(a) Concealed; or

(b) Inaccessible to industrial personnel.

[1] Section 111.105 of this chapter contains the requirements for Class I hazardous locations.

§ 58.60–7 Industrial systems: piping.

The piping for industrial systems under this subpart must meet ANSI B31.3, except that blow out preventor control systems must also meet API RP 53, Recommended Practice for Blowout Protection Equipment Systems.

§ 58.60–9 Industrial systems: design.

Each system under this subpart must be designed and analyzed under API RP 140, Analysis, Design, Installation and Testing of Basic Surface Safety Systems on Offshore Production Platforms.

§ 58.60–11 Analyses, plans, diagrams and specifications: submission.

(a) Each industrial system must be analyzed by a registered professional engineer to certify that the system has been designed in accordance with applicable standards.

(b) The certification must—

(1) Appear on all diagrams and analyses; and

(2) Be submitted under § 50.20–5 of this chapter.

(c) Standards or specifications for non-pressurized, mechanical or structural systems, and components such as derricks, drawworks, and rotary tables which comply with standards or specifications not referenced in this subchapter must be placed on the plans or in the specifications of the unit.

§ 58.60–13 Inspection.

An industrial system is accepted by the Coast Guard if the inspector finds—

(a) The system meets this subpart;

(b) There are guards, shields, insulation or similar devices for protection of personnel; and

(c) The system is not manifestly unsafe.

PART 61—PERIODIC TESTS AND INSPECTIONS

24. By adding the words "mobile offshore drilling units," after the words "aboard ships," in § 61.10–1(a).

25. By adding the words "pressure vessels that are accepted under § 54.01–16" after the words "shop inspection and" in the first sentence of § 61.10–5(b).

26. By adding the words "Subchapter I–A (Mobile Offshore Drilling Units)," after the words "(Cargo and Miscellaneous Vessels)," in § 61.10–5(h).

27. By adding a new paragraph (b)(4) in § 61.20–15 to read as follows:

§ 61.20–15 Tailshaft survey.

* * * * *

(b) * * *

(4) A mobile offshore drilling unit that has a tailshaft is not subject to specified periods for drawing the tailshaft if the tailshaft is—

(i) Drawn for inspection during regularly scheduled drydocking; or

(ii) Regularly inspected in a manner acceptable to the Commandant.

28. By adding a new Subchapter II to read as follows:

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AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86), sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367), R.S. 4405, as amended (46 U.S.C. 375), R.S. 4423, as amended (46 U.S.C. 400), R.S. 4429, as amended (46 U.S.C. 407), R.S. 4430, as amended (46 U.S.C. 408), 88 Stat. 423 (46 U.S.C. 411), R.S. 4434, as amended (46 U.S.C. 416), sec. 1, 73 Stat. 475 (46 U.S.C. 481), sec. 4, 67 Stat. 462 (43 U.S.C. 1333(e)); 49 CFR 1.46 (b) and (n)(6).

PART 107—INSPECTION AND CERTIFICATION

Subpart A—General

§ 107.01 Purpose of subchapter.

This subchapter prescribes rules for the design, construction, equipment, inspection and operation of mobile offshore drilling units operating under the U.S. flag.

§ 107.111 Definitions.

As used in this subchapter:

"Approved" means approved by the Commandant.

"Column stabilized unit" means a unit with the main deck connected to the underwater hull or footings by columns or caissons.

"Commandant" means the Commandant of the Coast Guard or his authorized representative.

"District Commander" means an officer of the Coast Guard who commands a Coast Guard District described in 33 CFR Part 3 or his authorized representative.

"Headquarters" means Office of the Commandant, U.S. Coast Guard, Washington, D.C. 20590.

"Industrial systems and components" means any machinery or equipment on board a mobile offshore drilling unit for use in the industrial function of the unit.

"International service" means operation of a mobile offshore drilling unit on an international voyage or in waters under the jurisdiction of foreign nations or the United Nations.

"Marine inspector" means any person designated by an Officer in Charge, Marine Inspection, as a marine inspector.

"Master" or "Person in charge" means a person designated under § 109.107.

"Mobile offshore drilling unit" or "unit" means a vessel, except a public vessel of the United States, capable of engaging in drilling operations for the exploration or exploitation of subsea resources that is—

(1) Seagoing and 300 or more gross tons and self-propelled by motor;

(2) Seagoing and 100 or more gross tons and non-self-propelled; or

(3) More than 65 feet in length and propelled by steam.

"Non-self-propelled unit" means a unit which is not self-propelled.

"Officer in Charge, Marine Inspection" means an officer of the Coast Guard who commands a Marine Inspection Zone described in 33 CFR Part 3 or his authorized representative.

"Self-elevating unit" means a unit with movable legs capable of raising its hull above the surface of the sea.

"Self-propelled unit" means a unit that has propulsion machinery that provides for independent underway navigation.

"Surface type unit" means a unit with a ship shape on barge type displacement hull of single or multiple hull construction intended for operation in the floating condition.

"Watertight" means designed and constructed to withstand a static head of water without any leakage, except that "watertight equipment" means enclosed equipment so constructed that a stream of water from a hose (not less than 1 inch in diameter) under head of about 35 feet from a distance of about 10 feet, and for a period of 5 minutes, can be played on the apparatus without leakage.

"Weathertight" means that water will not penetrate into the unit in any sea condition, except that "weathertight equipment" means equipment so constructed or protected that exposure to a beating rain will not result in the entrance of water.

§ 107.113 Industrial personnel.

Industrial personnel are all persons, exclusive of the required crew as set forth in the Certificate of Inspection, carried on board a mobile offshore drilling unit for the sole purpose of carrying out the industrial business or functions of the unit.

§ 107.115 Seagoing barges.

All non-self-propelled units of 100 gross tons and over that proceed on voy-

ages on the high seas or ocean are subject to inspection and certification as seagoing barges.

Subpart B—Inspection and Certification

§ 107.201 Purpose.

This subpart prescribes rules for the—

(a) Original inspection and issuance of an original Certificate of Inspection required by 46 U.S.C. 367, 391, 395, and 399;

(b) Biennial inspection for certification and renewal of a Certificate of Inspection required by 46 U.S.C. 367, 391, 395, and 399;

(c) Reinspection required by 46 U.S.C. 435;

(d) Inspection after an accident required by 46 U.S.C. 435; and

(e) Inspection of repairs or alterations, or both, required by 46 U.S.C. 435;

(f) Amendments to Certificates of Inspection; and

(g) Issuance of Temporary Certificate of Inspection; and

(h) Issuance of Permit To Proceed to Another Port for Repairs.

§ 107.211 Original certificate of inspection.

(a) The owner or builder of a unit applies for an inspection for an original Certificate of Inspection by submitting before construction is started—

(1) A completed Application for Inspection of U.S. Vessel, Form CG–3752, to the Officer in Charge, Marine Inspection, of the marine inspection zone in which the unit is to be constructed; and

(2) Plans and information indicating the proposed arrangement and construction of the unit to the Coast Guard in accordance with Subpart C of this Part.

(b) An original Certificate of Inspection is issued if the Coast Guard finds, during the inspections conducted while the unit is being constructed, that a unit contracted for on or after (effective date) meets § 107.231.

(c) An original Certificate of Inspection is issued if the Coast Guard finds that an uncertified unit contracted for before (effective date) meets the requirements of this Subchapter and Navigation and Vessel Inspection Circular, Inspection of Existing Mobile Offshore Drilling Units. Existing structure, arrangements, materials, equipment, and facilities will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as originally used. Major alterations and conversions shall be in compliance with the provisions of each subpart of this part to the satisfaction of the Officer in Charge, Marine Inspection.

(d) A Certificate of Inspection expires 24 months after the date of issue.

§ 107.215 Biennial inspection for certification.

(a) The master, owner, or agent of a certificated unit may apply for a biennial inspection for the renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel, Form CG–3752, to the Officer in Charge, Marine Inspection, in or nearest to the port where the inspection will be made.

(b) The master, owner, or agent of a certificated unit operating in international service may apply for renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel Form CG–3752, to the appropriate Officer in Charge, Marine Inspection, at least 90 days before the expiration date that appears on the unit's unexpired Certificate of Inspection.

(c) A Certificate of Inspection is renewed if the Coast Guard finds, during the biennial inspection, that—

(1) A unit contracted for on or after (effective date), meets the requirements of this Subchapter; or

(2) A unit contracted for before (effective date), and issued a Certificate of Inspection under Subchapter I of this Chapter, meets the requirements of Navigation and Vessel Inspection Circular, Inspection of Existing Mobile Offshore Drilling Units.

§ 107.219 Permit to proceed to another port for repairs.

(a) If a unit fails to meet the requirements in § 107.231, and the Coast Guard withholds reissuance of a Certificate of Inspection, or suspends an unexpired Certificate of Inspection, as described in § 107.279, a Permit to Proceed to Another Port for Repairs (Form CG–948) is issued by the Coast Guard if—

(1) The owner, master, person in charge, or agent makes a written request for a permit to the Officer in Charge, Marine Inspection, that includes—

(i) The reason the permit is requested;

(ii) The port in which the repairs are to be made; and

(iii) The period of time for the voyage;

(2) The Officer in Charge, Marine Inspection finds that the unit is seaworthy for the voyage.

(b) A Permit to Proceed to Another Port for Repairs is in force for the period of the voyage to the port in which the repairs are to be made.

§ 107.223 Temporary certificate of inspection: period in effect.

A Temporary Certificate of Inspection, issued under 46 U.S.C. 399, is effective until a Certificate of Inspection is issued to the unit.

§ 107.227 Certificate of inspection amendment.

The Coast Guard issues a Certificate of Inspection Amendment, Form CG–858, to a certificated unit if a requirement for equipment and data listed on the unexpired Certificate of Inspection is changed.

§ 107.231 Inspection for certification.

A unit is issued a Certificate of Inspection under § 107.211 or § 107.215(c) if the inspector finds the following:

(a) The unit and its equipment comply with—

(1) Part 108 of this subchapter;

(2) Subchapter J of this chapter, Electrical Engineering; [2]

(3) Subchapter F of this chapter, Marine Engineering; [3]

(4) Subchapter E of this chapter, Load Lines;

(5) Part 64 or Part 98 of this chapter, or both, if the unit carries marine portable tanks or portable tanks;

(6) The vessel design and equipment requirements of the Pollution Prevention Regulations (33 CFR Part 155, Subpart B);

(7) the Rules of the Road requirements for the waters in which the unit navigates, contained in—

(i) 33 U.S.C. Chapters 3, 4, 5, or 21; and

(ii) 33 CFR Parts 80, 85, or 86.

Lifesaving Equipment

(b) The air tanks of each lifeboat are airtight.

(c) Each lifeboat, each lifeboat launching system, and each davit launched liferaft launching system passes the test in § 107.239.

(d) Each winch electrical control apparatus for lifeboats meets the testing requirements in § 107.243.

(e) Each inflatable liferaft is serviceable and meets the servicing requirement in § 160.051–6 of this chapter.

(f) Each hydraulic release for inflatable liferafts meets the periodic servicing and testing requirements in § 160.062–4 of this chapter.

(g) Each gravity davit meets the testing requirements in § 107.247.

(h) Each life preserver is serviceable.

(i) A life preserver that is cleaned or repaired meets Subpart 160.006 of this chapter.

(j) Each buoyant work vest is serviceable.

Fire Fighting Equipment

(k) Each hand portable fire extinguisher and each semiportable fire extinguisher is serviced, if required, in accordance with § 107.235(a).

(l) Each fixed fire-extinguishing system is serviced, if required, in accordance with § 107.235(b).

(m) Each fire main system meets the testing requirements in § 107.251.

(n) Each fire hose meets the testing requirements in § 107.257.

Cranes

(o) The rated load test for cranes in § 107.260 is met.

(p) Each crane is inspected and tested in accordance with § 107.259.

Miscellaneous

(q) Each sliding watertight door is operative.

(r) Each valve with a remote control is operative.

(s) Each means of escape on the unit is safe for the intended service.

(t) There is not an accumulation of oil which might create a fire hazard on

[2] Requirements for industrial systems and components are in Subpart 111.107 of this Chapter.

[3] Requirements for industrial systems and components are in Subpart 58.60 of this Chapter.

tank tops, decks, in drip pans, machinery spaces, and pumproom bilges.

(u) Each accommodation space is sanitary.

(v) The unit meets the drydocking requirement in § 107.261 or the special examination in § 107.265 or § 107.267.

(w) The unit meets the equipment and data information requirements on its certificate of inspection.

(x) The unit that engages in international voyages has on board the appropriate certificates issued under 47 U.S.C. 360:

(1) Safety Radiotelegraph Certificate or Safety Radiotelephony Certificate.

(2) Exemption Certificate, if an exemption has been granted.

INSTALLATION TESTS

(y) Each lifeboat, lifeboat davit, and liferaft winch meets the installation tests in § 94.35-5(b) of this chapter.

(z) Each davit launched life raft meets the installation test in § 95.37-5 of this chapter.

(aa) Piping for each carbon dioxide extinguishing system meets the installation test in § 108.449 of this chapter.

(bb) Each sliding watertight door meets the installation tests in § 163.001-6(b) of this chapter.

OTHER TESTS AND INSPECTIONS

(cc) The unit and its equipment meet any other test or inspection deemed necessary by the inspector to determine if they are suitable for the service in which they are to be employed.

§ 107.235 Servicing of hand portable fire extinguishers, semi-portable fire extinguishers and fixed fire-extinguishing systems.

(a) To meet the servicing requirements in § 107.231(k), each hand portable fire extinguisher and each semi-portable fire extinguisher on board the unit must be serviced by—

(1) Discharging each extinguisher containing soda acid, cleaning each hose and the insides of the extinguisher, and recharging;

(2) Discharging each extinguisher containing foam, cleaning each hose and the insides of the extinguisher, and recharging;

(3) Discharging each pump tank extinguisher containing water or antifreeze, cleaning each base and the insides of the extinguisher, and recharging;

(4) Removing the pressure cartridge of each cartridge operated extinguisher and replacing the cartridge if the end is punctured, draining the water, antifreeze, or solution from the extinguisher, cleaning each hose and the insides of the extinguisher, and recharging;

(5) Recharging the cylinder of each carbon dioxide extinguisher, if the weight loss is more than 10 percent of the weight of the charge, and cleaning each hose and each nozzle;

(6) Removing the pressure cartridge of each cartridge operated dry chemical extinguisher, cleaning each hose and each nozzle of the extinguisher, and recharging; and

(7) Weighing each stored pressure type dry chemical extinguisher, adding dry chemicals if not fully charged, and pressurizing to the operating range.

NOTE.—All carbon dioxide cylinders and discharge hoses of semi-portable carbon dioxide systems must be tested and marked in accordance with § 147.04-1 of this Chapter.

(b) To meet the servicing requirements in § 107.231(l), each fixed fire-extinguishing system must be serviced by—

(1) Recharging the cylinders of each carbon dioxide system, if the weight loss is more than 10% of the weight of the charge;

(2) Testing each foam system, except premix systems by—

(i) Discharging foam for approximately 15 seconds form a nozzle designated by the marine inspector;

(ii) Discharging water from all other lines and nozzles; and

(iii) Taking a sample of the foam liquid and submitting it for determination of its specific gravity, PH, percentage of water dilution, and solid content, and certification as a suitable firefighting foam;

(3) Removing the pressure cartridge of each premix aqueous film forming foam system and replacing the cartridge if the seal is punctured, sampling the premix solution in accordance with the manufacturer's instructions, and replacing cylinders that are discharged.

§ 107.239 Testing of lifeboats, lifeboat launching systems, and davit launched life raft systems.

To meet the requirements in § 107.231(c)—

(a) Each lifeboat must be loaded to the deadweight equivalent of the allowed capacity, lowered into the water, and released from the falls;

(b) The launching equipment for each davit launced life raft must be tested by suspending a test weight from the releasing hook and lowering the weight to near the water; and

(c) The launching equipment for each lifeboat or davit launched life raft must be tested with a weight equal to the weight of the lifeboat or raft plus the full complement of persons and equipment.

NOTE.—In making these tests deadweight is equivalent to 165 pounds for each person in the allowed capacity.

§ 107.243 Testing of winch electrical control apparatus for lifeboats.

To meet the requirement in § 197.231(d), each winch electrical control apparatus for lifeboats must be opened and inspected.

§ 107.247 Testing of gravity davits.

To meet the requirements in § 107.231(q), each lifeboat on gravity davits must be swung out and lowered from any stopped position by releasing the brake on the lifeboat winch.

§ 107.251 Testing of the fire main.

To meet the requirements in § 107.231(m), each fire main system must be opened and the pressure checked at—

(a) The most remote outlet; and

(b) The highest outlet.

§ 107.257 Testing of fire hose.

To meet the requirements in § 107.231(n), each fire hose must be subjected to a test pressure equivalent to the maximum pressure to which it may be subjected during operation. However, each fire hose must be subjected to a pressure of at least 100 p.s.i.g.

§ 107.258 Crane certification.

(a) The Coast Guard may accept current certificates issued by approved organizations as evidence of condition and suitability of cranes. The following organizations are approved by the Coast Guard as crane certifying authorities:

(1) American Bureau of Shipping, 45 Broad St., New York, N.Y. 10004.

(2) International Cargo Gear Bureau, Inc., 17 Battery Place, New York, N.Y. 10004.

(b) Crane certification must be based upon—

(1) A review of plans submitted under § 107.309; and

(2) The continuing program of tests and inspections in § 107.258.

(c) Each load test and inspection by the certifying authority must be recorded in the unit's Crane Record Book required in § 109.437.

§ 107.259 Crane inspection, and testing.

(a) To meet the requirements in § 107.231(p), each crane must be inspected and tested in accordance with Section 3 of the American Petroleum Institute (A.P.I.) Recommended Practice for Operation and Maintenance of Offshore Cranes, API RP 2D, First Edition, October 1972, except that the rated load test must be performed in accordance with § 107.260.

(b) The tests and inspections must be conducted by—

(1) A Coast Guard marine inspector; or

(2) The American Bureau of Shipping (A.B.S.), or the International Cargo Gear Bureau, Inc. (I.C.G.B.) for cranes under certification by these organizations.

(c) If the tests and inspections are conducted by the A.B.S. or the I.C.G.B. the surveyor shall certify that the tests and inspections were conducted in accordance with the A.P.I. specification.

§ 107.260 Rated load test for cranes.

(a) To meet the requirements in § 107.231(o), each crane must meet the following rated load test at the usual boom angle employed in material transfers over the side of the unit:

Rated load of assembled gear	*Proof load*
Less than or equal to 20 tons.	25 percent in excess.
Greater than 20 tons but less than or equal to 50 tons.	5 tons in excess.
Greater than 50 tons.	10 percent in excess.

(b) The weight of the hook, hook blocks, slings, rib, and other rigging, except the hoist rope, must be considered part of the load for the rated load test.

(c) The rated load test must be performed—

(1) When the crane is installed;

(2) Each 48 months; and

(3) After repairs or alteration to any structural component of the crane.

§ 107.261 Drydock or special examination.

(a) Each unit must at least once during each 24 month period after it is issued a Certificate of Inspection be—

(1) Drydocked in the presence of a Coast Guard inspector;

(2) If a unit is column-stabilized, especially examined in accordance with § 107.265 in the presence of a Coast Guard inspector; or

(3) If a unit is self-elevating, specially examined in accordance with § 107.267 in the presence of a Coast Guard inspector.

(b) The master, person in charge, owner, or agent of a certificated unit must notify the appropriate Officer in Charge, Marine Inspection before the unit is drydocked, or specially examined.

(c) The master, person in charge, owner, or agent of a certificated unit operating in international service must notify the appropriate Officer in Charge, Marine Inspection at least 90 days before the unit is drydocked or specially examined under § 107.265.

§ 107.265 Special examination in lieu of drydocking for column stabilized units.

(a) A column stabilized unit must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b); and

(2) Accepted by the Coast Guard.

(b) To meet the requirements in paragraph (a), the owner or operator of the unit must submit a plan to the Coast Guard that provides the methods used to determine the condition of the hull and that contains the following information:

(1) The planned location where the unit is to be examined.

(2) The draft at which the unit is to be examined.

(3) The names of the diver or diving company selected for the examination.

(4) The method of visual presentation for the examination.

(5) The method used to clean the underwater portion of the hull.

(6) The method and location of gauging the underwater portion of the hull.

(7) The number of underwater hull fittings and number of compartments to be opened.

(8) The underwater high stress areas and the welds in those areas to be examined.

§ 107.267 Special examination in lieu of drydocking for self-elevating units.

(a) A self-elevating unit must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b); and

(2) Accepted by the Coast Guard.

(b) To meet the requirements in paragraph (a), the owner or operator of the unit must submit a plan to the Coast Guard that provides for—

(1) Examination of the unit's hull while it is in the elevated position; and

(2) Examination of the supporting mat, spud cans, or footings while the unit is afloat.

(c) The plan required in paragraph (b) must contain the following information:

(1) The planned location where the unit is to be examined.

(2) The methods to be used to conduct the hull examination.

(3) The method of visual presentation for examination of the underwater components.

(4) The methods of determining the condition of the underwater components.

(5) The underwater high stress areas and the welds in those areas that are to be examined.

(6) The names of the diver or diving company selected for the examination.

§ 107.269 Reinspection.

The Coast Guard reinspects a unit within the period between the 10th and 14th months after the month in which the certificate is issued to determine if the unit meets the requirements in § 107.231, except § 107.231 (y), (z), (aa), and (bb).

§ 107.271 Inspection: alterations.

After plans are approved for alterations affecting the safety of the unit, the Coast Guard conducts inspections of the—

(a) Hull;

(b) Machinery; or

(c) Equipment.

§ 107.275 Other inspections.

When the Coast Guard receives the report required in § 109.411 or § 109.425, the Coast Guard conducts the following inspections of a unit to determine if the unit meets the requirements under which it was issued its original Certificate of Inspection:

(a) An inspection after an accident.

(b) An inspection after a defect is found that affects—

(1) The seaworthiness of the unit; or

(2) The safety or efficiency of a life-saving device, or firefighting device.

(c) An inspection of repairs made because of an accident or a defect.

§ 107.279 Certificate of inspection: failure to meet requirements.

If a unit fails to meet the requirements in § 107.231, the Coast Guard may—

(a) Withhold issuance of an original Certificate of Inspection after an original inspection for certification, until the unit meets the requirements in § 107.231;

(b) Withhold renewal of a Certificate of Inspection after a biennial inspection for certification until the unit meets the requirements in § 107.231, except § 107.231 (y), (z), (aa), and (bb);

(c) Suspend an unexpired certificate of inspection after a reinspection, until the unit meets the requirements in § 107.231, except § 107.231 (y), (z), (aa), and (bb);

(d) Revoke an unexpired Certificate of Inspection after a reinspection if the unit operates without complying with Coast Guard orders to correct unlawful conditions;

(e) Revoke or suspend an unexpired Certificate of Inspection;

(f) Withhold renewal of safety equipment certificate;

(g) Withhold renewal of safety equipment certificate;

(h) Suspend an unexpired safety equipment certificate;

(i) Revoke an unexpired safety equipment certificate; and

(j) Withhold, suspend, or revoke an exemption certificate.

Subpart C—Plan Approval

§ 107.301 Purpose.

This subpart prescribes procedures for submitting plans and specifications for plan approval and describes the information that must be submitted.

§ 107.305 Plans and information.

Each applicant for approval of plans must submit three copies of each of the following generally described plans, specifications, details, and structural calculations showing the construction, arrangement, required equipment, and safety features of the unit.

GENERAL

(a) Specifications.

(b) General arrangement plan of decks, holds, inner bottoms, etc. including inboard and outboard profile.

HULL STRUCTURE[1]

(c) *Inner bottom plating and framing.

(d) *Midship section.

(e) *Shell plating and framing.

(f) *Stern, stern frame, and rudder.

(g) *Structural deck plans for strength decks.

(h) *Pillars and girders.

(i) *Watertight and oiltight bulkheads.

(j) *Foundations for main machinery and boilers.

(k) *Arrangement of ports, doors, and airports in shell plating.

(l) *Hatch coamings and covers in weather and watertight decks.

(m) *Details of watertight doors and operating gear.

(n) *Scuppers and drains penetrating shell plating.

(o) Arrangement of cranes.

(p) For self-elevating units, column stabilized units, and units with special

[1] The asterisk(*) indicates items that are approved by the American Bureau of Shipping for vessels classed by it. Items approved by the American Bureau of Shipping are generally accepted as satisfactory unless the law or Coast Guard regulations contain requirements that are not covered by the American Bureau of Shipping.

hull configuration, structural calculations and plans showing special structural features.

STABILITY

(q) Lines.

(r) Curves of form and cross curves of stability.

(s) Capacity plan showing capacities and vertical, longitudinal, and transverse centers of gravity of stowage spaces and tanks.

(t) Tank sounding tables.

(u) Draft mark locations.

(u–1) Intact stability and damage stability data.

FIRE CONTROL

(v) General arrangement plans showing, for each deck, the control stations, fire sections enclosed by fire resisting bulkheads, alarm and extinguishing systems, fire extinguishers, means of access to compartments and other decks, and the ventilation system, including location of ventilation shut downs, positions of dampers, and the numbers identifying each system.

(w) Ventilation diagram, including dampers and other fire control features.

(x) Details of fire alarm systems.

(y) Details of fixed fire extinguishing systems.

MARINE ENGINEERING

(z) Plans required for marine engineering equipment and systems by Subchapter F of this chapter.

ELECTRICAL ENGINEERING

(aa) Plans required for electrical engineering equipment and systems by Subchapter J of this chapter.

LIFE SAVING EQUIPMENT

(bb) The location and arrangement of each life saving system including each embarkation deck, showing each overboard discharge, and projections in the way of launching lifeboats and liferafts.

(cc) The weight of each lifeboat when fully equipped and loaded.

(dd) Working loads of davits and winches.

(ee) Types and sizes of falls.

(ff) Manufacturer's name and identification of each item of equipments.

PERSONNEL ACCOMMODATIONS

(gg) Arrangement plans showing each accommodation space, ventilation, and means of escape.

CONSTRUCTION PORTFOLIO[6]

(hh) A construction portfolio that documents the areas where high or higher strength special steels are used in the hull construction of any unit and provides sufficient information to enable quality repairs to be made. The portfolio must contain the following:

(1) Structural plans showing areas incorporating the special steels. A simplified steel plan may be included in the portfolio if it adequately defines the areas of steel application.

(2) A list of special steels that conform to ABS or ASTM specifications. For steels that do not conform to ABS or ASTM specifications, complete specifications, including chemical and physical properties and special testing and heat treating.

(3) Each approved weld procedure for the fabrication of each structure using special steel and each approved weld test procedure.

OPERATING MANUAL

(ii) The operating manual required in § 109.121.

§ 107.309 Crane plans and information.

(a) Three copies of each of the following must be submitted:

(1) Stress and arrangement diagrams, bill of materials, and supporting calculations for all structural components listed in API Spec. 2C, Second Edition, February 1972 (with supplement 2).

(2) Drawings of foundations and substructures with supporting calculations for support and stability of each crane.

(3) Plans showing the installation of the safety features required in § 108.601.

(4) Drawing of the means provided to stop motion and set brakes during a power failure.

NOTE: These plans may be submitted to the Coast Guard, if the crane is not certified. If the crane is to be certified, four copies must be sent to the American Bureau of Shipping or the International Cargo Gear Bureau.

(b) In addition to the plans and information required in paragraph (a), the following plans and information must be submitted to the Coast Guard only:

(1) One-line diagrams of the electric power circuits of the electric power crane overload protection required in Subpart 111.50 of this chapter.

(2) Drawings of the hydraulic control system, with a bill of materials, if the system is—

(i) Used for hoisting and raising and lowering the boom; and

(ii) Not designed to be fail safe in accordance with Subpart 58.30 of this chapter.

(3) Drawing of pneumatic control systems, with a bill of materials, for systems designed for an air pressure of greater than 150 p.s.i.g.

§ 107.317 Addresses for submittal of plans, specifications, and calculations.

The copies of each plan, specification, and calculation required under § 107.305 and § 107.309 must be submitted to one of the following:

(a) The Officer in Charge, Marine Inspection, in the zone in which the unit is to be built or altered.

(b) One of the following field technical offices:

(1) Commander(mmt), 3rd Coast Guard District, Governors Island, New York, NY 10004, for the geographical area covered by the 1st and 3rd Coast Guard Districts.

(2) Commander(mmt), 5th Coast Guard District, Federal Bldg., 431 Crawford St., Portsmouth, VA 23705.

(3) Commander(mmt), 8th Coast Guard District, Hale Boggs Federal Building, 500 Camp Street, New Orleans, LA 70130, for the geographical area covered by the 2nd, 7th, and 8th Coast Guard Districts.

(4) Commander(mmt), 9th Coast Guard District, 1240 East 9th St., Cleveland, OH 44199.

(5) Commander(mmt), 12th Coast Guard District, 630 Sansome St., San Francisco, CA 94126, for the geographical area covered by the 11th, 12th, 13th, 14th, and 17th Coast Guard Districts.

(c) The American Bureau of Shipping, (ABS) 45 Broad St., New York, NY 10004.

NOTE.—Only the plans indicated with an asterisk in § 107.305 for a unit classed by the ABS may be submitted to the ABS.

(d) International Cargo Gear Bureau, Inc., 17 Battery Place, New York, NY 10004.

NOTE.—Only the plans required in § 107.309 may be submitted to the International Cargo Gear Bureau.

Subpart D—Certificates Under International Convention for Safety of Life at Sea, 1960

§ 107.401 Purpose and definition.

(a) The International Convention for Safety of Life at Sea, 1960, requires one or more of the certificates described in this subpart to be carried on self-propelled vessels of 500 gross tons or over engaged in international voyages. This subpart prescribes rules for the issuance of these certificates.

(b) "International voyage" has the same meaning as stated in Regulation 2(d) of Part A, Chapter I in the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60), which is: " a voyage from a country to which the present Convention applies to a port outside such country, or conversely; and for this purpose every territory for the international relations of which a Contracting Government is responsible or for which the United Nations are the administering authority is regarded as a separate country." The Coast Guard has interpreted this definition to include—

(1) A voyage from a country to which SOLAS 60 applies, to a port outside that country or the reverse;

(2) A voyage from any territory, including the Commonwealth of Puerto Rico, the Canal Zone, all possessions of the United States, and all lands held by the United States under a protectorate or mandate, whose international relations are the responsibility of a contracting SOLAS 60 government, or which is administered by the United Nations, to a port outside that territory or the reverse; or

(3) a voyage between the contiguous states of the United States and the states of Hawaii or Alaska or between the states of Hawaii and Alaska. The Coast

[6] This portfolio may be included in the operating manual required in § 109.121, and a precautionary statement is written on the certificate of Inspection.

Guard has interpreted this definition to not include a "Great Lakes voyage" which means a voyage solely on the Great Lakes of North America and the St. Lawrence River west of a straight line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd Meridian.

§ 107.405 Safety equipment certificate.

(a) A self propelled unit of at least 500 gross tons that engages in international voyages is issued a safety equipment certificate if the inspector issues it a certificate of inspection under § 107.211 or § 107.215 and it meets Chapter 3 of the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27.

(b) A safety equipment certificate expires 24 months after the date of issue.

§ 107.409 Safety construction certificate.

(a) Application for a safety construction certificate is made by indicating in the space provided on the Application for Inspection Form CG-3752 whether the American Bureau of Shipping or the Coast Guard is to issue the certificate.

(b) The American Bureau of Shipping or the Coast Guard may issue a unit of at least 500 gross tons that engages on international voyages a safety construction certificate if the unit meets the requirements in Regulation 12(a)(ii), Chapter I of the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27.

(c) A safety construction certificate expires 60 months after the date of issue.

(d) If a unit fails to meet the requirements in Regulation 12(a)(ii), the Coast Guard may—

(1) Suspend an unexpired safety construction certificate; or

(2) Revoke an unexpired safety construction certificate.

§ 107.413 Exemption certificate.

(a) An owner or operator of a unit may request an exemption from the requirements of the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60) by writing to the OCMI.

(b) The Coast Guard may exempt a self-propelled unit of at least 500 gross tons on an international voyage from any of the requirements in the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60) if the unit meets the conditions of Regulation 4 of Part A, Chapter I, of SOLAS 60 which states the following: "A ship which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of the present Regulations provided that it complies with safety requirements which are adequate in the opinion of the Administration for the voyage which is to be undertaken by the ship."

(c) The Coast Guard may exempt a self-propelled unit of at least 500 gross tons on an international voyage from the requirements of Chapter III (Lifesaving Appliances, & C.) of SOLAS 60 if the unit meets the conditions of Regulation 3 of Chapter III which states in part: "The Administration, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of the full requirements of this chapter (Chapter III) unreasonable or unnecessary, may to that extent exempt from the requirements of this chapter individual ships or classes of ships which, in the course of their voyage, do not go more than 20 miles from the nearest land * * *".

(d) The Coast Guard may exempt a unit from the requirements of Chapter II (Construction) of SOLAS 60 if the unit meets the conditions of Regulation 1(c) of Part A of Chapter II of SOLAS 60 which states the following: "The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter (Chapter II) unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships belonging to its country which, in the course of their voyage, do not proceed more than 20 miles from the nearest land."

(e) An Exemption Certificate is in force for the period of validity of the certificate to which it refers.

PART 108—DESIGN AND EQUIPMENT

Subpart A—General

§ 108.103 Equipment not required on a unit.

Each item of lifesaving and firefighting equipment that a unit has in addition to those required by this part for the unit must meet the requirements of this subchapter for that item of equipment.

§ 108.105 Substitutes for required fittings, material, apparatus, equipment, arrangements, and tests.

(a) The Coast Guard may accept substitutes for fittings, material, apparatus, equipment, arrangements, and tests required in this Subchapter if the substitute provides an equivalent level of safety.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangement, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

§ 108.109 Classification society standards.

(a) When, in this Subchapter, the standards established by the American Bureau of Shipping are required to be met, the current standards in effect at the time of the contract date of the unit must be used.[*]

(b) Any person who desires to use the rules of a classification society other than the American Bureau of Shipping to meet requirements in this Subchapter must request recognition of that society from the Commandant (G-MMT). The relevant rules must be submitted with the request.

Subpart B—Construction and Arrangement

HULL STRUCTURE

§ 108.113 Structural standards.

Each unit must meet the structural standards of a recognized classification society described in § 108.109 of this subchapter.

§ 108.114 Appliances for watertight and weathertight integrity.

(a) Appliances to ensure watertight integrity include watertight doors, hatches, scuttles, bolted manhole covers, or other watertight closures for openings in watertight decks and bulkheads.

(b) Appliances to ensure weathertight integrity include weathertight doors and hatches, closures for air pipes, ventilators, ventilation intakes and outlets, and closures for other openings in deckhouses and superstructures.

(c) Each internal opening fixed with appliances to ensure watertight integrity which are used temporarily during operation of the unit while afloat must meet the following:

(1) Each door, hatch, and scuttle must—

(i) Be remotely controlled from a normally manned control station, and be operable locally from both sides of the bulkhead; or

(ii) If there is no means of remote control there must be an alarm system which signals whether the appliance is open or closed both locally at each appliance and in a normally manned control station.

(2) Each closing appliance must remain watertight under the design water pressure of the watertight boundary of which it is a part.

(d) Each external opening fitted with an appliance to ensure weathertight integrity must be located so that it would not be submerged below the final equilibrim waterline if the unit is subjected simultaneously to—

(1) Damage causing flooding described in §§ 108.319 through 108.323; and

(2) A wind heeling moment calculated in accordance with § 108.311 using a wind velocity of 25.8 meters per second (50 knots).

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[*] The standards established by the American Bureau of Shipping are usually published annually and may be purchased from the American Bureau of Shipping, 45 Broad Street, New York, N.Y. 10004. These standards may also be examined at the Office of the Commandant (M), U.S. Coast Guard, Washington, D.C. 20590, or at the office of any Coast Guard District Commander or Officer in Charge, Marine Inspection.

§ 108.115 Sliding watertight doors.

If a unit is equipped with sliding watertight doors, each sliding watertight door must be approved under Subpart 163.001 of Subchapter Q of this chapter.

FIRE PROTECTION: GENERAL

§ 108.123 Isolation of combustible material.

Each internal combustion engine exhaust, boiler and galley uptake, and similar heat source must be separated or insulated from combustible materials.

§ 108.127 Storage lockers for combustibles.

Each oil and paint locker must be made of steel or an equivalent material or be completely lined with steel or an equivalent material as described in § 108.131(c) of this subpart.

STRUCTURAL FIRE PROTECTION

§ 108.131 Definitions.

(a) "Standard Fire Test" means the test in which specimens of the relevant bulkheads or decks, having a surface of approximately 4.65 square meters (50 square feet) and a height of 2.44 meters (8 feet) resembling as closely as possible the intended construction and including, where appropriate, at least one joint, are exposed in a test furnace to a series of temperature relationships approximately as follows:

At the end of 5 minutes —538° C. (1,000° F.).
At the end of 10 minutes —704°C. (1,300° F.).
At the end of 30 minutes —843°C. (1,550° F.).
At the end of 60 minutes —927°C. (1,700° F.).

(b) Bulkheads and decks are classed as follows:

(1) "A class bulkhead or deck" means a bulkhead or deck that—

(i) Is made of steel or other equivalent material; and

(ii) Prevents the passage of flame and smoke for 60 minutes if subjected to the standard fire test.

(2) "A 60 bulkhead or deck" means an A class bulkhead or deck that—

(i) Is insulated with approved insulation, bulkhead panels, or deck covering;

(ii) If subjected to the standard fire test for 60 minutes, has an average temperature rise on the unexposed side of the insulated bulkhead or deck of less than 139°C. (250°F.) above the temperature before the standard fire test and has a temperature rise at any point on the unexposed surface, including any joint, of less than 180°C. (325°F.) above the temperature before the standard fire test.

(3) "B class bulkhead or deck" means a bulkhead or deck that—

(i) Is made of approved noncombustible material;

(ii) Prevents flame from passing through it for 30 minutes if subjected to the standard fire test.

(4) "C class bulkhead or deck" means a bulkhead or deck made of approved noncombustible material.

(c) "Equivalent material" means a material that by itself or with insulation has smoke and fire retardant properties equal to that of the steel required for "A" or "B" class bulkheads or decks and has structural qualities equivalent to steel at the end of the applicable fire exposure.

(d) "Approved material" means a material approved under one of the following subparts of Subchapter Q of this chapter:

(1) Deck coverings, Subpart 164.006.
(2) Structural insulation, Subpart 164.007.
(3) Bulkhead panel, Subpart 164.008.
(4) Noncombustible materials, Subpart 164.009;
(5) Interior finishes, Subpart 164.012.

(e) "Stairtower" means a stairway that penetrates more than one deck within the same enclosure, or two or more stairways that—

(1) Are arranged vertically one above the other; or

(2) Penetrate both the deck and the overhead within the same enclosure.

(f) "Classified location" means—

(1) The following Class I Division 1 locations:

(i) An enclosed space that has—

(A) A shale shaker;

(B) Mud processing equipment between the well and the location of final degassing; or

(C) Open drilling mud tanks or open ditches between the well and the location of final degassing.

(ii) A location in the weather that is—

(A) Within 1.5 meters (5 feet) of any of the equipment listed in paragraph (1)(i);

(B) Within 1.5 meters (5 feet) of a ventilation outlet, door, or opening of a space listed in paragraph (1)(i); or

(C) Within 1.5 meters (5 feet) of a gas vent outlet.

(iii) A Division 2 location, as defined in paragraph (b)(2) where combustible or flammable gases might accumulate.

(iv) All of the enclosure of an enclosed derrick substructure.

(v) Except as provided in paragraph (3), an enclosed space that has a direct access to a location under paragraphs (1)(i) through (iv).

(2) The following Class I Division 2 locations;

(i) An enclosed space that has any open portion of the mud return system, from the location of final degassing to the mud pump suction connection at the mud pit.

(ii) A location in the weather that is—

(A) Within 3 meters (10 feet) of the center of the bottom surface of the rotary table;

(B) Within 1.5 meters (5 feet) of a ventilation outlet for or a door for a space listed in paragraph (2)(i); or

(C) Within 1.5 meters (5 feet) of a Class I Division 1 location in the weather.

(iii) The surface of an enclosed derrick floor and all of the floor's enclosure above the drilling floor.

(iv) Except as provided in paragraph (3), an enclosed space that has a direct access to a location under paragraph 2 (i) through (iii).

(3) An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location except—

(i) An enclosed space that has direct access to a Division 1 location is not a classified location if—

(A) The access has a self-closing gastight door that opens into the space and that has no hold back device; and

(B) Ventilation causes greater pressure in the space than in the Division 1 location; and

(C) Loss of pressure in the space to a lesser pressure than that in the Division 1 location actuates an alarm at a manned control station.

(ii) An enclosed space that has direct access to a Division 2 location is not a classified location if—

(A) The access has a gastight door;

(B) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(C) Loss of ventilation actuates an alarm at a manned control station.

(g) "Accommodation space" includes, sleeping, mess, hospital, recreational, toilet, washing and shower spaces, and corridors.

§ 108.133 Hull superstructure, structural bulkheads, decks, and deckhouses.

Each hull superstructure, structural bulkhead, deck, and deckhouse must be made of steel or an equivalent material.

§ 108.135 Boundary bulkheads, decks of galleys, and combustible material lockers.

Each boundary bulkhead and deck of each galley, each combination galley and messroom, and each combustible material storage locker must be an A class bulkhead and A class deck respectively.

§ 108.137 Bulkhead and deck separations of accommodation spaces.

Each boundary bulkhead and deck that separates an accommodation space or control station from the following must be an A class bulkhead and A class deck respectively—

(a) Machinery space;
(b) Galley or combination galley and messroom;
(c) Main pantry;
(d) Classified space;
(e) Store room.

§ 108.139 Boundary bulkheads and decks of a space containing emergency power.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source must be an A class bulkhead and A class deck. When separate but adjoining spaces are provided, boundary bulkhead type construction is not required for separating partitions common to each space.

§ 108.141 Boundary bulkheads and decks between the emergency power source and service generators.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source that adjoins a space containing a ship's service generator, the components of a ship's service generator, or a restricted space must be an A–60 bulkhead and A–60 deck.

§ 108.143 Accommodation space.

(a) Each corridor bulkhead in an accommodation space must be an A class or B class bulkhead except if an A class bulkhead is specifically required by this Part.

(b) No door in a corridor bulkhead in an accommodation space may have a louver, except that a stateroom door may have louvers in its lower half.

(c) Each stairtower, elevator, and dumbwaiter, and other trunk must be enclosed by A class bulkheads.

(d) Each bulkhead not described under paragraph (a) of this section must be either A class, B class, or C class bulkheads.

(e) At least one opening to each stairway must be enclosed by either A class or B class bulkheads and doors.

(f) Each stairtower must have doors at all levels and each must be an A class door.

(g) Each door required by paragraphs (e) and (f) of this section—

(1) Must be self-closing;

(2) May not have any means to permanently hold the door open, except for magnetic holdbacks that are operated from the bridge or other remote location.

(h) Interior stairs, including stringers and treads, must be made of steel or an equivalent material.

(i) Except in washrooms and toilet spaces, each deck covering in an accommodation space must be made of an approved material, except an overlay on a deck for leveling or finishing that is not more than 9.375 millimeters (⅜ inch) thick.

(j) Except as provided in paragraph (1), each ceiling, lining, insulation, and pipe and duct lagging in an accommodation space must be made of an approved material that is noncombustible.

(k) Each sheathing, furring, or holding piece used to secure a bulkhead, ceiling, lining, or insulation in an accommodation space must be made of an approved material that is noncombustible.

(l) No bulkhead, lining, or ceiling in an accommodation space may have a combustible veneer greater than 2.1 millimeters (1/12 inch) in thickness.

(m) Each corridor or hidden space in an accommodation space may be covered by an approved interior finish or a reasonable number of coats of paint. However, no corridor or hidden space may have combustible veneer, trim, or decoration.

§ 108.145 Hatches and tonnage openings.

Each hatch, except a hatch between storage spaces and each tonnage opening closure, must be made of steel or an equivalent material of the same class as the bulkhead or deck where the opening occurs.

§ 108.147 Certain paints prohibited.

No nitrocellulose or other highly flammable or noxious fume-producing paint or lacquer may be used on a unit.

MEANS OF ESCAPE

§ 108.151 Two means required.

(a) Each of the following must have at least 2 means of escape:

(1) Each space that is used by personnel on a regular basis, except an individual living space.

(2) Each accommodation space with a deck area of at least 27 square meters (300 square feet).

(b) When two means of escape are required from a space below the main deck, at least one of the means of escape must be through an opening other than a watertight door.

(c) When two means of escape are required from a space opening to the weather, at least one of the means of escape must be through a quick acting door.

§ 108.153 Location of means of escape.

The required two means of escape must be through exits that minimize the possibility of having both exits blocked if a fire or other casualty occurs in the area.

§ 108.155 Type of means of escape prohibited.

A required means of escape may not be a vertical ladder or deck scuttle, except that one of the means of escape may be a vertical ladder or deck scuttle if a stairway would be impracticable.

§ 108.157 Locked doors.

No door to the required means of escape may be designed to lock except—

(a) A crash door or a door that has a locking device that can be easily forced, if on both sides of the door a permanent and easily seen instruction is placed; or

(b) An outside door to a deckhouse if the door can be locked by key only and if the master or person in charge has control of the key to the door's lock.

§ 108.159 Stairway width.

Each stairway, except a stairway in a machinery or storage space, must be at least 70 centimeters (28 inches) wide with an angle of inclination from the horizontal of not more than 50 degrees, except that special consideration may be given if it is impracticable to install a 70 centimeters (28 inch) wide stairway.

§ 108.160 Vertical ladder width.

Each vertical ladder must meet the requirements of ANSI Code A14.3 for Fixed Ladders.

§ 108.161 Dead end corridors.

No dead end corridor may be more than 13 meters (43 feet) long.

§ 108.165 Access to lifeboats and liferafts.

Each unit must be designed to provide direct access to the lifeboat and liferaft embarkation areas.

§ 108.167 Weather deck ladders.

Each unit must have at least one permanent, inclined ladder between each weather deck.

VENTILATION

§ 108.181 Ventilation for enclosed spaces.

(a) Each enclosed space must be vented or ventilated.

(b) There must be a means to close each vent or ventilating system.

(c) Each fan in a ventilating system must have remote controls installed in accordance with Subpart 111.103 of this chapter.

(d) There must be a means to close each doorway, ventilator, and annular space around each funnel or other opening to machinery, stowage, or working spaces. The means must be located outside the space.

(e) Each intake in a ventilating system must be located so as to prevent as far as practicable the intake of noxious fumes.

§ 108.185 Ventilation for enclosed classified locations.

(a) The ventilation system for each enclosed classified location must be designed to maintain a pressure differential between the enclosed classified location and each non-classfied location adjacent to the enclosed classified location, so as to prevent the discharge of ignitable gases into these non-classified adjacent locations.

(b) Each air intake must be outside of enclosed classified locations.

(c) Each unit must have alarms at a continuously manned station that signal that—

(1) Gas is present in a enclosed classified location; or

(2) The ventilation system for the space is not working.

(d) Each ventilation system for classified locations must provide a complete change of air every five minutes.

§ 108.187 Ventilation for brush type electric motors in classified spaces.

Ventilation for brush type electric motors in classified locations must meet NFPA 496, "Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations", except audible and visual alarms may be used if shutting down the motors may cause unsafe conditions.

ACCOMMODATION SPACES

§ 108.193 Accommodation spaces: location: all units.

(a) There must be no direct communication between the accommodation spaces and any chainlocker, stowage, or machinery space, except through solid, close-fitted doors or hatches.

(b) No access, vent, or sounding tube from a fuel or oil tank may open into any accommodation space, except that accesses and sounding tubes may open into corridors.

§ 108.195 Accommodation spaces: location: surface type units.

On surface type units—

(a) Accommodation spaces must not

be located forward of a vertical plane located at 5 percent of the unit's length aft of the stem, at the designed summer load line; and

(b) The deckhead of each accommodation space must be above the deepest load line.

§ 108.197 Accommodation spaces: construction: all units.

(a) Each sleeping, mess, recreational, or hospital space that is adjacent to or immediately above a stowage or machinery space, paint locker, drying room, washroom, toilet space, or other odor source, must be protected by odorproof bulkheads and deckheads.

(b) Each accommodation space that is adjacent to or immediately above a galley, machinery space, machinery casing, boiler room, or other heat source, must be protected from the heat.

(c) Where the shell or an unsheathed weather deck forms a boundary of an accommodation space, the shell or deck must have a covering that prevents the formation of moisture.

(d) The interior sides and deckheads of each accommodation space must be a light color.

(e) Each accommodation space in which water may accumulate must have a drain scupper located in the lowest part of the space, considering the average trim of the unit.

(f) Each public toilet space must be constructed and located so that its odors do not readily enter any sleeping, mess, recreational, or hospital space.

§ 108.199 Accommodation spaces: sleeping spaces: arrangement.

To the extent practicable, each occupation group must be berthed together in sleeping spaces arranged to minimize disturbance created by personnel leaving for or arriving from a working period.

§ 108.201 Accommodation spaces: sleeping spaces: size.

(a) No sleeping space may berth more than four persons, except that a sleeping space for industrial personnel not regularly employed on a unit may berth up to six persons if the space meets § 108.199 and berthing of six persons in that space is authorized by the Commandant.

(b) Without deducting any equipment used by the occupants, each sleeping space must have for each occupant—

(1) 2.8 square meters (approximately 30 square feet) of deck area; and

(2) 6 cubic meters (approximately 210 cubic feet) of volume.

(c) Each sleeping space must have at least 191 centimeters (approximately 6 feet 3 inches) of headroom over clear deck areas.

§ 108.203 Accommodation spaces: sleeping spaces: berths and lockers.

(a) Each sleeping space must have a separate berth for each occupant.

(b) No more than one berth may be placed over another.

(c) Each berth must have a framework of hard, smooth material that is not likely to corrode or harbor vermin.

(d) Each berth must be arranged to provide ample room for easy occupancy.

(e) Each berth must be at least 76 centimeters (approximately 30 inches) wide by 193 centimeters (approximately 76 inches) long.

(f) Adjacent berths must be separated by a partition that extends at least 46 centimeters (approximately 18 inches) above the sleeping surface.

(g) The bottom of a lower berth must be at least 30 centimeters (approximately 12 inches) above the deck.

(h) The bottom of an upper berth must be at least 76 centimeters (approximately 2 feet 6 inches) from the bottom of the berth below it and from the deck or any pipe, ventilating duct, or other obstruction above it.

(i) Each occupant of a sleeping space must have a readily accessible locker of hard, smooth material.

(j) Each locker must be at least .194 square meters (approximately 300 square inches) in cross section and 1.53 meters (approximately 60 inches) high.

(k) Each berth must have a berth light.

§ 108.205 Accommodation spaces: wash spaces; toilet spaces; and shower spaces.

(a) For the purposes of this section—

(1) "Private facility" means a toilet, washing, or shower space that is accessible only from one single or double occupancy sleeping space;

(2) "Semi-private facility" means a toilet, washing or shower space that is accessible from either of two one-to-four person occupancy sleeping spaces; and

(3) "Public facility" means a toilet, washing, or shower space that is not a private or semi-private facility.

(b) Each private facility must have one toilet, one shower, and one washbasin, all of which may be in a single space.

(c) Each semi-private facility must have at least one toilet and one shower, which may be in a single space.

(d) Each room adjoining a semi-private facility must have a washbasin if a washbasin is not installed in a semi-private facility.

(e) Each unit must have enough public facilities to provide at least one toilet, one shower, and one washbasin for each eight persons who occupy sleeping spaces that do not have private or semi-private facilities.

(f) Urinals may be installed in toilet rooms, but no toilet required in this section may be replaced by a urinal.

(g) Each public toilet space and washing space must be convenient to the sleeping space that it serves.

(h) No public facility may open into any sleeping space.

(i) Each washbasin, shower, and bathtub must have hot and cold running water.

(j) Adjacent toilets must be separated by a partition that is open at the top and bottom for ventilation and cleaning.

(k) Public toilet facilities and shower facilities must be separated.

(l) Each public facility that is a toilet space must have at least one washbasin unless the only access to the toilet space is through a washing space.

(m) Each toilet must have an open front seat.

(n) Each washing space and toilet space must be so constructed and arranged that it can be kept in a clean and sanitary condition and the plumbing and mechanical appliances kept in good working order.

(o) Washbasins may be located in sleeping spaces.

§ 108.207 Accommodation spaces: messrooms.

(a) Each messroom that is not near the galley that serves it must be equipped with a steamtable.

(b) Each messroom must seat the number of persons expected to eat in the messroom at one time.

§ 108.209 Accommodation spaces: hospital space.

(a) Each unit carrying twelve or more persons on a voyage of more than three days must have a hospital space.

(b) Each hospital space must be suitably separated from other spaces.

(c) No hospital space may be used for any other purpose, when used for care of the sick.

(d) An entrance to each hospital space must be wide enough and arranged to readily admit a stretcher.

(e) Each berth in a hospital space must be made of metal.

(f) Each upper berth must be hinged and arranged so that it can be secured clear of the lower berth.

(g) Each hospital space must have at least one berth that is accessible from both sides.

(h) Each hospital space must have one berth for every 12 persons or portion thereof on board, who are not berthed in single occupancy rooms, but the number of berths need not exceed six.

(i) Each hospital space must have a toilet, washbasin, and bathtub or shower accessible from the hospital space.

(j) Each hospital space must have equipment such as clothes lockers, a table, and a seat.

(k) A hospital space is not required on a unit if one single or double occupancy sleeping space is designated and equipped as a treatment or isolation room or both and—

(1) Is available for immediate medical use;

(2) Has an entrance that is wide enough and arranged to admit a stretcher case readily;

(3) Has a single berth or examination table that is accessible from both sides;

(4) Has a washbasin in or immediately adjacent to it.

§ 108.211 Accommodation spaces: other spaces.

(a) Each unit must have enough facilities for personnel to wash their own clothes, including at least one tub or sink that has hot and cold running water.

(b) Each unit must have enough equipment or space for the personnel to dry their own clothes.

(c) Each unit must have an accommodation space that can be used for recreation.

§ 108.213 Accommodation spaces: heating.

(a) Each accommodation space must be heated by a heating system that can maintain at least 20°C. (68°F.).

(b) Radiators and other heating apparatuses must be located or shielded or both so as to avoid risk of—

(1) Fire;

(2) Personal injury; and

(3) Discomfort to the occupants of each accommodation space.

(c) Each exposed pipe in an accommodation space, leading to a radiator or other heating apparatuses must be insulated.

§ 108.215 Accommodation spaces: insect screens.

Accommodation spaces must be protected against the admission of insects.

RAILS

§ 108.217 Guardrails and bulwarks.

(a) Each unit must have guardrails or bulwarks along the edge of the bridge, of each deck, and of each deck opening.

(b) Each guardrail and bulwark must extend at least one meter (39.37 inches) above the deck except where this height may interfere with the normal operation of the unit, a lesser height may be approved.

§ 108.219 Guardrails.

(a) Except on a freeboard or superstructure deck, each guardrail must have at least three courses not more than 38 centimeters (15 in.) apart with the lowest course not more than 23 centimeters (9 in.) above the deck.

(b) Each guardrail on a freeboard or superstructure deck must have at least three evenly spaced courses.

(c) For a rounded gunwale, the guardrail must be at the edge of the flat of the deck.

§ 108.221 Storm rails.

Each unit must have a storm rail in the following locations:

(a) On each deckhouse side that is normally accessible.

(b) On each side of each passageway that is wider than 1.83 meters (6 feet).

(c) On at least one side of each passageway that is less than 1.83 meters (6 feet) wide.

§ 108.223 Guard on exposed places.

Each unit must have hand covers, guards, or rails installed on all belts, gears, shafts, pulleys, sprockets spindles, flywheels or other reciprocating, rotating or moving parts of machinery or equipment normally exposed to contact by personnel.

HELICOPTER FACILITIES

§ 108.231 Application.

Section 108.231 through § 108.241 apply to each unit with a helicopter landing facility.

§ 108.233 Location and size..

Each helicopter landing facility must be—

(a) At least the size of the rotor diameter of the largest helicopter using the deck; and

(b) Located so as to provide clear paths to enable the largest helicopter using the deck to operate in all weather conditions which allow helicopter operations.

§ 108.235 Construction of the helicopter facility.

(a) Each helicopter landing facility must be designed to accommodate the loading (static) and landing (dynamic) characteristics of the largest helicopter that can use the facility.

(b) Design calculations for a helicopter landing facility must be made by placing the load in the most unfavorable position for each structural member analyzed.

(c) For a landing area on a deck that forms an integral part of a unit's structure, the analysis required in paragraph (b) must be based on—

(1) A classification society standard acceptable to the Coast Guard; or

(2) Existing stresses in the deck and the greater of—

(i) The gross weight of a loaded helicopter plus inertia forces from the helicopter due to vessel motions; or

(ii) The collapse load of the landing gear specified by the helicopter manufacturer.

(d) For a landing platform that is erected as a separate structure, the analysis required in paragraph (b) must be based on—

(1) A classification society standard acceptable to the Coast Guard; or

(2) The dead load of the structure, wind forces and the greater of—

(i) The gross weight of a loaded helicopter plus inertia forces from the helicopter and the platform due to vessel motions; or

(ii) The collapse load of the landing gear specified by the helicopter manufacturer.

(e) The landing area of all helicopter facilities must—

(1) Have a non-skid surface;

(2) Have drainage facilities that prevent the collection of liquids and prevent liquids from spreading to or falling on other parts of the unit;

(3) Have recessed tie-down points; and

(4) Be free of projections, except that landing lights or other projections may be installed around the periphery of the landing deck provided they do not interfere with landing and take-off operations.

(f) The unprotected perimeter of each helicopter facility must have a safety net at least 1.5 meters (4.92 ft.) wide.

(g) Each helicopter facility must have at least two access routes that are located as far apart from each other as practicable.

§ 108.237 Fuel storage facilities.

(a) Helicopter fuel storage tanks must be installed as far as practicable from—

(1) The landing area; and

(2) Each source of vapor ignition.

(b) Integral tanks must meet Subpart 58.50 of this chapter.

(c) Marine portable fuel stowage tanks must meet Subpart 96.40 of this chapter.

(d) Each marine portable fuel stowage tank must have a means to contain fuel spills or leaks.

§ 108.239 Fuel transfer equipment.

(a) Each nozzle must be a "deadman" type.

(b) Each hose must have a storage reel.

(c) Each hose must have a static grounding device.

(d) Each electric fuel transfer pump must have a control with a fuel transfer pump operation indicator light at the pump.

(e) There must be a fuel pump control at each access.

(f) Each fuel transfer pump and each hose reel must have a means to contain fuel spills or leaks.

(g) Each hose must meet paragraph 510 of Part V of the National Fire Protection Association Standard for Aircraft Fue Servicing (N.F.P.A. No. 407–1973).

§ 108.241 Visual aids.

Each helicopter landing area must have visual aids that meet the intent of the recommendations in the FAA Heliport Design Guide (AC 150/5390–1A November 5, 1969).

Subpart D—Stability

§ 108.301 Stability: definitions.

For the purposes of this subpart—

(a) "Normal operating condition" means a condition of a unit when loaded or arranged for drilling, field transit, or ocean transit; and

(b) "Severe storm condition" means a condition of a unit when loaded or arranged to withstand the passage of a severe storm.

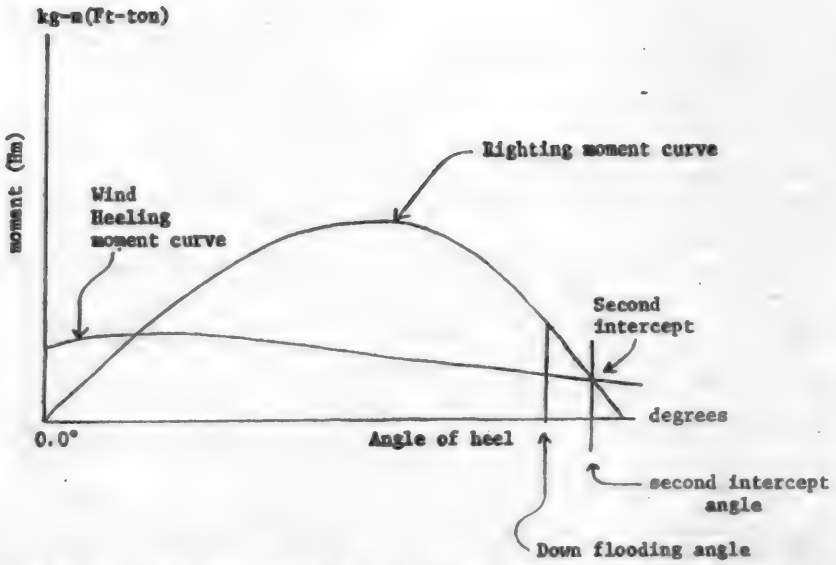
§ 108.303 Stability requirements: general.

Each unit must be designed in accordance with the stability criteria in § 108.305 to have positive metacentric height in the upright equilibrium position for the full range of drafts, whether at the operating draft for navigation, towing, or drilling afloat, or at a temporary draft when changing drafts.

§ 108.305 Intact stability requirements.

(a) Each unit must be designed so that the wind heeling moments (Hm) and righting moments calculated for each of its normal operating conditions and severe storm conditions, when plotted on graph 108.305, define areas that satisfy the equation [Area (A)] $\geq$ [K] $\times$ [Area (B)] where—

Graph 108.305 - Intact Stability Curves for a Given Normal Operating or Severe Storm Mode



(i) K=1.4, except that if the unit is a column stabilized unit K=1.3;

(ii) Area (A) is the area on graph 108.305 under the righting moment curve between 0° and the second intercept angle or the angle of heel at which downflooding would occur, whichever angle is less; and

(iii) Area (B) is the area on graph 108.305 under the wind heeling moment curve between 0° and the second intercept angle or the angle of heel at which downflooding of the unit would occur whichever angle is less.

(b) Each righting moment on graph 108.305 must be positive for all angles greater than 0° and less than the second intercept angle.

(c) The downflooding angle must be taken at the first opening which cannot rapidly be closed watertight. Small openings through which progressive flooding cannot take place need not be considered as points of downflooding.

(d) Each unit must be designed so that it can be changed from each of its normal operating conditions to a severe storm condition within a minimum period of time consistent with operating conditions as set out in § 109.121.

§ 108.309 Stability on bottom.

Each bottom bearing unit must be designed so that, while supported on the sea bottom with footings or a mat, it continually exerts a downward force on each footing or the mat when subjected to the forces of wave and current and to wind blowing at the velocities described in § 108.311(b)(3).

§ 108.311 Calculation of wind heeling moment (Hm).

(a) The wind heeling moment (Hm) of a unit in a given normal operating condition or severe storm condition is the sum of the individual wind heeling moments (H) calculated for each of the exposed surfaces on the unit; i.e., $Hm=\epsilon H$.

(b) Each wind heeling moment (H) must be calculated using the equation $H=kv^2C_hC_sAh$ where—

(1) H=wind heeling moment for an exposed surface on the unit;

(2) k=0.0623 (kg-sec^2)/m^4 (0.00338 lb/(ft^2—knots^2));

(3) v=wind velocity of—

(i) 36 meters per second (70 knots) for normal operating conditions

(ii) 51.5 meters per second (100 knots) for severe storm conditions

(iii) 25.8 meters per second (50 knots) for damage conditions.

(4) A=projected area of an exposed surface on the unit;

(5) C_h=height coefficient for "A" from Table 108.311(a);

(6) C_s=shape coefficient for "A" from Table 108.311(b); and

(7) h=the vertical distance from the center of lateral resistance of the underwater hull to the center of wind pressure on "A".

(c) When calculating "A" in the equation described in paragraph (b) of this section—

(1) The projected area of each column or leg, if the unit has columns or legs, must not include shielding allowances;

(2) Each area exposed as a result of heel must be included;

(3) The projected area of a cluster of deck houses may be used instead of the projected area of each individual deck house in the cluster; and

(4) The projected area of open truss work may be calculated by taking 30% of the projected areas of both the front and back sides of the open truss work rather than by determining the projected area of each structural member of the truss work.

TABLE 108.311(a).—C_h values, height

Meters at—		Feet at—		C_h
Over	Not exceeding	Over	exceeding	
0	15.2	0	50	1.00
15.2	30.5	50	100	1.10
30.5	46.0	100	150	1.20
46.0	61.0	150	200	1.30
61.0	76.0	200	250	1.37
76.0	91.5	250	300	1.43
91.5	106.5	300	350	1.48
106.5	122.0	350	400	1.53
122.0	137.0	400	450	1.56
137.0	152.5	450	500	1.60
152.5	167.5	500	550	1.64
167.5	182.0	550	600	1.67
182.0	198.0	600	650	1.70
198.0	213.5	650	700	1.73
213.5	228.5	700	750	1.75
228.5	244.0	750	800	1.77
244.0	256.0	800	850	1.79
>256		>850		1.90

NOTE.—The "C_h" value in this table used in the equation described in § 108.311(b) corresponds to the value of the vertical distance in meters (feet) from the actual water line of the unit to the center of area "A".

TABLE 108.311(b).—C_s values

Shape:	C_s
Cylindrical shapes	.5
Hull (surface type)	1.0
Deckhouse	1.0
Cluster of deckhouses	1.1
Isolated structural shapes (cranes, angles, channels, beams, etc.)	1.5
Under deck areas (smooth surfaces)	1.0
Under deck areas (exposed beams and girders)	1.3
Rig derrick (each face)	1.25

NOTE.—The value of C_s in this table used in the equation described in § 108.311(b) corresponds to the shape of the projected area "A".

§ 108.313 Submission of intact stability data.

Intact stability data submitted under § 107.305 of this subchapter must contain the righting moment curves and wind heeling moment curves described in graph 108.305 of this subpart, each with supporting calculations, for each of the unit's normal operating conditions and severe storm conditions.

§ 108.315 Damage stability requirements.

(a) Each unit must be designed so that, while in each of its normal operating conditions and severe storm conditions, its final equilibrium waterline would remain below the lowest edge of any opening through which additional flooding could occur if the unit were subjected simultaneously to—

(1) Damage causing flooding described in §§ 108.319 through 108.323; and

(2) A wind heeling moment calculated in accordance with § 108.311(b) using a wind velocity of 25.8 meters per second (50 knots).

(b) Each unit must have a means to close off each pipe, ventilation system, and trunk in each compartment described in § 108.321 or § 108.323 if any portion of the pipe, ventilation system, or trunk is within 1.5 meters (5 feet) of the hull.

§ 108.317 General damage stability assumptions.

For the purpose of determining compliance with § 108.315 of this subpart, the assumptions are made that during flooding and the resulting change in the unit's waterline—

(a) The unit is not anchored or moored; and

(b) No compartments on the unit are ballasted or pumped out to compensate for the flooding described in §§ 108.319–108.323 of this subpart.

§ 108.319 Compartments assumed flooded: general.

The individual flooding of each of the compartments described in § 108.321 and § 108.323 of this subpart must be assumed for the purpose of determining compliance with § 108.315(a) of this subpart. Simultaneous flooding of more than one compartment must be assumed when indicated in § 108.321 and § 108.323.

§ 108.321 Flooding on self-elevating and surface type units.

(a) On a self-elevating or surface type unit each watertight compartment within 1.5 meters (5 feet) of the bottom shell or an exposed deck must be assumed to be subject to flooding.

(b) On a surface type unit or self-elevating unit all compartments within 1.5 meters (5 feet) of the hull of the unit between two adjacent main watertight bulkheads, the bottom shell, and the uppermost deck must be assumed to be subject to simultaneous flooding.

(c) On the mat of a self-elevating unit all compartments within 1.5 meters (5 feet) of an outer side of the mat between two adjacent main watertight bulkheads, the bottom of the mat and the top of the mat must be assumed to be subject to simultaneous flooding.

§ 108.323 Flooding on column stabilized units.

(a) On a column stabilized unit, each watertight compartment within 1.5 meters (5 feet) of an outer surface of each column or footing on the periphery of the unit must be assumed to be subject to flooding.

(b) When a column is subdivided into watertight compartments by horizontal watertight flats, all compartments in the column within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(c) When a column is subdivided into watertight compartments by vertical watertight bulkheads, each two adjacent compartments must be assumed subject to simultaneous flooding if the angle between the vertical watertight bulkheads forming the compartments is 45 degrees or less.

(d) When a column is subdivided into watertight compartments by horizontal watertight flats and vertical watertight bulkheads, all compartments assumed to be subject to flooding in paragraphs (b) and (c) must be assumed to be subject to simultaneous flooding.

(e) Compartments in a footing must be assumed to be subject to flooding when any part of the compartment is within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding.

§ 108.325 Permeabilities.

The calculations submitted in accordance with § 108.329 of this subpart must show the permeability of each space considered in the calculations. The calculation of each permeability used must also be shown unless the value used is listed in Table 108.325.

TABLE 108.325—*Permeability values*

Space:	*Permeability*
Cargo or storage space	0.60
Accommodation space	0.95
Machinery space	0.85
Tank intended for liquids	[1] 0.0 or 0.95

[1] Use the value which results in the greatest change in the unit's waterline.

§ 108.329 Submission of damage stability data and calculations.

Damage stability data must be submitted for approval before the unit's original inspection for certification. This data must contain residual righting moment curves, wind heeling moment curves, and plans or sketches showing the unit's final equilibrium waterline, with supporting calculations for each, for each of the unit's normal operating conditions and severe storm conditions. This data must show compliance with § 108.315.

§ 108.335 Stability test.

(a) Except as provided in paragraph (c) of this section, the owner of a unit must—

(1) Conduct a stability test of the unit to determine its center of gravity and lightship displacement; and

(2) Submit the results of the test for approval by the Coast Guard before the unit's original inspection for certification.[7]

(b) An authorized Coast Guard representative must be present at each stability test conducted under this section.

(c) A stability test is not required for a unit if the owner provides the Coast Guard with the Coast Guard approved results of a stability test of a sister unit and the Commandant determines that reliable stability information for the unit not tested is obtainable from the test results of the sister unit.

§ 108.337 Plans and information required at the stability test.

The owner of a unit must provide the following plans and information to the authorized Coast Guard representative at the time of the stability test:

(a) Lines.

(b) Curves of form.

(c) Capacity plans showing capacities and vertical and longitudinal centers of gravity of stowage spaces and tanks.

(d) Tank sounding tables.

(e) Draft mark locations.

(f) General arrangement plan of decks, holds, and inner bottoms.

(g) Inboard and outboard profile.

(h) A complete list of material or equipment to be installed, removed, or relocated after the test, including the weight and location of each item on the list.

§ 108.339 Stability test preparations.

The following preparations must be made before conducting a stability test:

(a) The unit must be as complete as practicable at the time of the test.

(b) Each tank must be either empty and dry or full and without air pockets, except that a tank may be partially filled if the Commandant determines that compliance with this requirement is impracticable and that the effect of partial filling on the location of the center of gravity and the displacement of the unit can be accurately determined.

(c) All dunnage, tools, and other items extraneous to the complete unit must be removed from the unit.

(d) The water depth at the mooring site must provide ample clearance against grounding.

(e) Each mooring line must be arranged so that it does not interfere with the free inclination of the unit during the test.

(f) The draft and axis of rotation selected for the test must be those that result in the greatest accuracy in calculating the unit's center of gravity and displacement.

(g) At least two weeks prior to the date of the test, a stability test procedure must be submitted for approval. The procedure must include:

(1) Identification of the unit to be tested.

(2) Date and location of the test.

(3) Inclining weight data.

(4) Pendulum location and length.

(5) Approximate draft and trim of the unit.

(6) Condition of each tank.

(7) Estimated items to be installed, removed, or relocated after test, including the weight and location of each item.

(8) Schedule of events.

§ 108.341 Stability test procedure modifications.

The authorized Coast Guard representative present at a stability test may allow a deviation from the requirements of §§ 108.337 and 108.339 of this subpart if he determines that the deviation will not affect the accuracy of the test results.

§ 108.343 Stability: alterations.

Where alterations are made which materially affect the stability of a unit, amended stability information must be approved by the Coast Guard. The Coast Guard may require the unit to have a new stability test.

Subpart E—Fire Extinguishing Systems

§ 108.401 Fire main system.

Each unit must have a fire main system.

[7] A stability letter is issued by the Coast Guard after approval of the test results and of the information required in § 109.121.

§ 108.403 Fire extinguishing systems: general.

(a) Each of the following on a unit must have a fixed gas type extinguishing system:

(1) Each paint locker, oil room, and similar space.

(2) Each enclosed space containing internal combustion or gas turbine main propulsion machinery.

(3) Each enclosed space containing internal combustion auxiliary machinery with an aggregate power of at least 1000 B.H.P.

(4) Each enclosed space containing a fuel oil unit, purifier, valve, or manifold for main propulsion machinery or internal combustion auxiliary machinery with an aggregate power of at least 1000 B.H.P.

(5) Each enclosed ventilation system for electric motors or generators used for vital services including bilge pumps, fire pumps, or propulsion.

(b) Each space containing an oil fired boiler, the fuel oil unit or valves for the boiler, or manifolds in the line between the fuel settling tanks and the boiler on a unit must have a fixed gas type, foam, water spray, or other fire extinguishing system.

§ 108.403a Fire extinguishing systems: non-vital services.

Each enclosed ventilating system for electric motors or generators not used for vital services must have an access into the system for firefighting or be protected by a fixed fire protection system.

§ 108.404 Selection of fire detection system.

If a fire detection system is in a space, it must provide effective detection, without false alarms, of the types of fires most likely to occur in the space.

§ 108.405 Fire detection system.

(a) Each fire detection system and each smoke detection system on a unit must—

(1) Be approved by the Commandant; and

(2) Have a visual alarm and an audible alarm in the pilothouse or at a normally manned control station for the system.

(b) Each fire detection system must be divided into zones to limit the area covered by any particular alarm signal.

(c) Each visual alarm must—

(1) Have a chart or diagram next to the alarm that shows the location of the zones in the system and that contains the instructions for operating, and testing the system;

(2) When activated show the zone in the system where fire has been detected; and

(3) Be in a noticeable location in the pilothouse or control station.

§ 108.407 Detectors for electric fire detection system.

(a) Each detector in an electric fire detection system must be located where—

(1) No portion of the overhead of a space protected is more than 3 meters (10 feet) from a detector;

(2) Beams and girders extending below the ceiling of the space protected and any other obstructions do not detract from the effectiveness of the detector; and

(3) Damage to the detector is unlikely to occur if it is not protected.

(b) Each detector must be set to activate at not less than 57°C (135°F) and at not more than 73°C (165°F) except that if a space normally has a high ambient temperature each detector may be set to activate at not less than 80°C (175°F) and not more than 107°C (225°F).

§ 108.409 Location and spacing of tubing in pneumatic fire detection system.

(a) All tubing in a pneumatic fire detection system must be on the overhead or within 300 millimeters (12 inches) of the overhead on a bulkhead in a location where—

(1) No portion of the overhead is more than 3.6 meters (12 feet) from the nearest point of tubing;

(2) Beams or girders extending below the ceiling or other obstructions do not detract from the effectiveness of the tubing; and

(3) Damage to the tubing, is unlikely to occur if it is not protected.

(b) If tubing in a tubing circuit is installed in an enclosed space, at least 5 percent of the tubing in the circuit must be exposed in the space, except that at least 7.6 meters (25 feet) of tubing must always be exposed in the space.

(c) A pneumatic fire detection system must be set to activate after approximately a 22°C. (40°F.) per minute increase in temperature at the center of the circuit in the system.

§ 108.411 Smoke detection system.

Each smoke accumulator in a smoke detection system must be located on the overhead of the compartment protected by the system in a location—

(a) Where no portion of the overhead of the compartment is more than 12 meters (40 feet) from an accumulator;

(b) That is no closer to the opening of a ventilator than 3 times the diameter or equivalent size of the opening.

(c) Where damage to the accumulator is unlikely to occur if it is not protected.

§ 108.413 Fusible element fire detection system.

(a) A fusible element fire detection system may be installed.

(b) The arrangements for the system must be acceptable to the Commandant.

FIRE MAIN SYSTEM

§ 108.415 Fire pump: general.

A fire main system must have at least two independently driven fire pumps that can each deliver water at a continuous pitot tube pressure of at least 3.5 kilograms per square centimeter (approximately 50 pounds per square inch) at at least two fire hose nozzles that are connected to the highest two fire hydrants on the unit, except that a column stabilized or self-elevating unit may have a fire main system of at least two independently driven fire pumps with booster pumps or storage tanks that meet the pressure requirement in this paragraph.

§ 108.417 Fire pump components and associated equipment.

(a) Each fire pump in a fire main system must have a relief valve on its discharge side that is set to relieve at 1.75 kilograms per square centimeter (approximately 25 pounds per square inch) in excess of the pump discharge pressure necessary to meet the pressure required in § 108.415 for the pump or 8.6 kilograms per square centimeter (approximately 125 pounds per square inch), whichever is greater. A relief valve may be omitted if the pump operating under shut off condition is not capable of developing the pressure described in § 108.415 plus 1.75 kilograms per square centimeter (25 pounds per square inch).

(b) Each fire pump in a fire main system must have a pressure gauge on its discharge side.

(c) Fire pumps may be used for other purposes. If a fire pump is used in a system other than the fire main system, each pipe connecting the other system must be connected to the pump discharge through a shut off valve at a manifold near the pump. If the fire pump exceeds the pressure in § 108.415 of this subpart, the pipe leading from the discharge manifold to other portions of the fire main system must have a reducing station and a pressure gauge in addition to the pressure gauge required by paragraph (b) of this section.

(d) If a fire pump has a reducing station, the relief valve required by paragraph (a) of this section for the pump and the additional pressure gauge required in paragraph (c) of this section must be located on the discharge side of the reducing station.

(e) An oil line must not be connected to a fire pump.

§ 108.419 Fire main capacity.

The diameter of the fire main must be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously.

§ 108.421 Location of fire pumps and associated equipment.

Each fire pump required by § 108.415, and the source of power, controls, sea connections for the fire pump, and booster pumps, if installed must be installed in locations where, if a fire occurs in an enclosed space, all of the fire pumps on the unit are not made inoperative, except that if compliance with this requirement is impracticable, a gas type extinguishing system may be installed to protect at least one of the fire pumps, its source of power, and controls.

§ 108.423 Fire hydrants and associated equipment.

(a) A fire main system must have enough fire hydrants so that each accessible space may be sprayed with at least two spray patterns of water.

(b) In a main machinery space except a shaft alley with no assigned space for stowage of combustibles, each spray pattern of water must be from one length of fire hose and each must be from a separate outlet. In all other spaces at least one spray pattern of water must be from one length of fire hose.

(c) No outlet on a fire hydrant may point above the horizontal.

(d) Each fire hydrant must have at least one spanner and at least one fire hose rack or reel.

§ 108.425 Fire hoses and associated equipment.

(a) Each length of fire hose in a fire main system must be —

(1) Of 1½ or 2½ inch nominal hose size diameter;

(2) Of 50 foot nominal hose size length; and

(3) Lined commercial fire hose that meets Standard 19 of the Underwriters' Laboratories, Inc., or Federal Specification ZZ–H–451d.

(b) Each fire hose coupling must —

(1) Be made of brass, bronze, or material that has corrosion resistant properties at least equal to those of brass or bronze; and

(2) Have 9 National Standard Fire-hose Coupling (NSFC) threads per inch for 1½ inch hose or 7½ NSFC threads per inch for 2½ inch hose.

(c) Each nozle for a fire hose in a fire main system must be a combination solid stream and water spray fire hose nozzle that is approved under Subpart 162.027 of this chapter.

(d) A low velocity spray applicator approved under Subpart 162.027 of this chapter is required at each fire hydrant serving —

(1) Machinery spaces containing oil fired boilers, internal combustion machinery or oil fuel units; and

(2) Helicopter decks.

§ 108.427 International shore connection.

(a) A fire main system on a unit in international service must have —

(1) At least two international shore connections that meet the requirements in Subpart 162.034 of this chapter; and

(2) A cutoff valve and check valve for each connection.

(b) Each connection must be in an accessible location and on opposite sides of the unit.

§ 108.429 Fire main system protection.

(a) Each pipe and fire hydrant in a fire main system must be installed to the extent practicable in locations that are not exposed to damage by materials that are moved on or onto the deck.

(b) Each part of the fire main system located on an exposed deck must either be protected against freezing or be fitted with cutout valves and drain valves to shut off and drain the entire exposed system in freezing weather.

Fixed Carbon Dioxide Fire Extinguishing Systems

§ 108.431 CO_2 systems; general.

(a) Sections 108.431 through 108.457 apply to high pressure carbon dioxide fire extinguishing systems.

(b) Low pressure systems, that is, those in which the carbon dioxide is stored in liquid form at low temperature, must be approved by the Commandant.

§ 108.433 Quantity of CO_2; general.

Each CO_2 system must have enough gas to meet the quantity requirements of § 108.439 for the space requiring the greatest amount of CO_2.

§ 108.435 CO_2 for enclosed ventilation systems for rotating electrical equipment.

(a) The number of pounds of CO_2 required for the initial charge to protect enclosed ventilation systems for rotating electrical equipment must be equal to the gross volume measured in cubic feet of the system divided by—

(1) 10 for systems having a volume less than 2,000 cubic feet, or

(2) 12 for systems having a volume of 2,000 cubic feet or more.

(b) In addition to the CO_2 required for the initial charge, the system must have enough CO_2 for delayed charges to maintain at least a 25 percent concentration until the equipment can be stopped, unless the initial charge is enough to maintain a 25 percent concentration.

§ 108.437 Pipe sizes and discharge rates for enclosed ventilation systems for rotating electrical equipment.

(a) The minimum pipe size for the initial charge must meet table 108.441 and the discharge of the required amount of CO_2 must be completed within 2 minutes.

(b) The minimum pipe size for the delayed discharge must be at least 1.25 centimeters (½ inch) standard pipe.

(c) The pipe used for the initial discharge must not be used for the delayed discharge, except on "small" systems.

§ 108.439 Quantity of CO_2 for protection of spaces.

(a) The number of pounds of CO_2 required to protect a space must be equal to the gross volume of the space divided by the appropriate factor from Table 108.439.

(b) If a machinery space includes a casing, the gross volume of the space may be calculated using the reductions allowed in 46 CFR 95.10–5(e).

(c) If fuel can drain from a space to an adjacent space or if two spaces are not entirely separate, the requirements for both spaces must be used to determine the amount of CO_2 to be provided and the CO_2 system must be arranged to discharge into both spaces simultaneously.

TABLE 108.439.—CO_2 *supply factors*

Gross volume of space in cubic feet		Factor
Over	Not over	
0	500	15
500	1,000	16
1,000	4,500	18
4,500	50,000	20
50,000	.....	22

§ 108.441 Piping and discharge rates for CO_2 protection of spaces.

(a) The size of branch lines to spaces protected by a CO_2 system must meet Table 108.441.

(b) Distribution piping within a space must be proportioned from the supply line to give proper distribution to the outlets without throttling.

(c) The number, type, and location of discharge outlets must distribute the CO_2 uniformly throughout the space.

TABLE 108.441—*CO_2 system pipe size*

CO_2 supply in system, kilograms (pounds):	*Minimum pipe size, millimeters (inches)*
45 (100)	12.7 (½)
104 (225)	19.05 (¾)
136 (300)	25.4 (1)
272 (600)	31.75 (1¼)
450 (1,000)	38.10 (1½)
1,100 (2,450)	50.80 (2)
1,130 (2,500)	63.5 (2½)
2,023 (4,450)	76.2 (3)
3,229 (7,100)	88.9 (3½)
4,750 (10,450)	101.6 (4)
6,818 (15,000)	114.3 (4½)

(d) The total area of all discharge outlets must be more than 35 percent and less than 85 percent of the nominal cylinder outlet area or the area of the supply area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square inches is determined by multiplying the factor 0.0022 by the number of pounds of CO_2 required. The nominal cylinder outlet area must not be less than 71 square millimeters (0.110 square inches).

(e) A CO_2 system must discharge at least 85 percent of the required amount within 2 minutes.

§ 108.443 Controls and valves.

(a) At least one control for operating a CO_2 system must be outside the space or spaces that the system protects and in a location that would be accessible if a fire occured in any space that the system protects. Control valves must not be located in a protected space.

(b) A CO_2 system that protects more than one space must have a manifold with a stop valve, the normal position of which is closed, that directs the flow of CO_2 to each protected space.

(c) A CO_2 system that protects only one space must have a stop valve installed between the cylinders and the discharge outlets in the system, except on a system that has a CO_2 supply of 136 kilograms (300 pounds) or less.

(d) At least one of the control stations in a CO_2 system that protects a machinery space must be as near as practicable to one of the main escapes from that space.

(e) All distribution valves and controls must be of an approved type.

(f) Each CO_2 system that has a stop valve must have a remote control that operates only the stop valve and must have a separate remote control for releasing the required amount of CO_2 into the space protected by the system.

(g) Each CO_2 system that does not have a stop valve must be operated by a remote control that releases the required amount of CO_2 into the space protected by the system.

(h) Remote controls to each space must be in an enclosure.

(i) Each system must have a manual control at its cylinders for releasing CO_2 from the cylinders, except that if the system has pilot cylinders, a manual control is not required for other than pilot cylinders.

(j) If gas pressure is used to release CO_2 from a system having more than 2 cylinders, the system must have at least 2 pilot cylinders to release the CO_2 from the remaining cylinders.

(k) If the entrance to a space containing the CO_2 supply or controls of a CO_2 system has a lock, the space must have a key to the lock in a break-glass type box that is next to and visible from the entrance.

§ 108.445 Alarm and means of escape.

(a) Each CO_2 system that has a supply of more than 136 kilograms (300 pounds) of CO_2, except a system that protects a tank, must have an alarm that sounds for at least 20 seconds before the CO_2 is released into the space.

(b) Each audible alarm for a CO_2 system must have the CO_2 supply for the system as its source of power and must be in a visible location in the spaces protected.

§ 108.447 Piping.

(a) Each pipe, valve, and fitting in a CO_2 system must have a bursting pressure of at least 420 kilograms per square centimeter (6,000 pounds per square inch).

(b) All piping for a CO_2 system of nominal size of 19.05 millimeters (¾ inch) inside diameter or less must be at least Schedule 40 (standard weight) and all piping of nominal size over 19.05 millimeters (¾ inch) inside diameter must be at least Schedule 80 (extra heavy).

(c) Each pipe, valve, and fitting made of ferrous materials in a CO_2 system must be protected inside and outside from corrosion.

(d) Each CO_2 system must have a pressure relief valve set to relieve between 168 and 196 kilograms per square centimeter (2,400 and 2,800 pounds per square inch) in the distribution manifold or other location that protects the piping when all branch line shut off valves are closed.

(e) The end of each branch line in a CO_2 system must extend at least 50 millimeters (2 inches) beyond the last discharge outlet and be closed with a cap or plug.

(f) Piping, valves, and fittings in a CO_2 system must be securely supported and protected from damage.

(g) Each CO_2 system must have drains and dirt traps located where dirt or moisture can accumulate in the system.

(h) Discharge piping in a CO_2 system may not be used for any other purpose except as part of a fire detection system.

(i) Piping in a CO_2 system that passes through accommodation spaces must not have drains or other openings within these spaces.

§ 108.449 Piping tests.

Each test prescribed in (a), (b), and (c) of this section must be performed upon completion of the piping installation—

(a) When tested with CO_2 or other inert gas under a pressure of 70 kilograms per square centimeter (1000 pounds per square inch) with no additional gas introduced into the system, the leakage in the piping from the cylinders to the stop valves in the manifold must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2 minute period.

(b) When tested with CO_2 or other inert gas under a pressure of 42 kilograms per square centimeter (600 pounds per square inch) with no additional gas introduced into the system, the leakage in each branch line must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2 minute period. The distribution piping must be capped within the protected space.

(c) Small independent systems protecting emergency generator rooms, lamp lockers and similar small spaces need not meet the tests prescribed in paragraphs (a) and (b) of this section if they are tested by blowing out the piping with air at a pressure of at least 7 kilograms per square centimeter (100 pounds per square inch).

§ 108.451 CO_2 storage.

(a) Except as provided in paragraph (b) of this section, each cylinder of a CO_2 system must be outside each space protected by the system and in a location that would be accessible if a fire occurred in any space protected by the system.

(b) A CO_2 system that has a CO_2 supply of 136 kilograms (300 pounds) or less may have one or more cylinders in the space protected by the system if the space has a heat detection system to activate the system automatically in addition to the remote and manual controls required by this subpart.

(c) Each space that contains cylinders of a CO_2 system must be ventilated and designed to prevent an ambient temperature of more than 54° C. (130° F.)

(d) Each cylinder in a CO_2 system must be fastened, supported, protected from damage, in an accessible location, and capable of removal from that location.

(e) Each unit must have a means for weighing cylinders of a CO_2 system.

(f) A cylinder in a CO_2 system may not be mounted in a position that is inclined more than 30° from a vertical position, except that a cylinder having flexible or bent siphon tubes may be mounted in a position that is inclined up to 80° from the vertical. The bottom of each cylinder when mounted must be at least 50.8 millimeters (2 inches) from the deck.

(g) If a cylinder does not have a check valve on its independent cylinder discharge, it must have a plug or cap to close the outlet when the cylinder is moved.

(h) Each CO_2 system cylinder must be made, tested, and marked in accordance with 46 CFR 147.04–1.

§ 108.453 Discharge outlets.

Each discharge outlet must be of an approved type.

§ 108.455 Enclosure openings.

(a) Mechanical ventilation for spaces protected by a CO_2 system must be designed to shut down automatically when the system is activated.

(b) Each space that is protected by a CO_2 system and that has natural ventilation must have a means for closing that ventilation.

(c) Each space protected by a CO_2 system must have the following means for closing the openings to the space from outside the space:

(1) Doors, shutters, or dampers for closing each opening in the lower portion of the space.

(2) Doors, shutters, dampers or temporary means such as canvas or other material normally on board a unit may be used for closing each opening in the upper portion of the space.

§ 108.457 Pressure release.

Each air tight or vapor tight space, such as a paint locker, that is protected by a CO_2 system must have a means for releasing pressure that accumulates within the space if CO_2 is discharged into the space.

Gas Extinguishing System: Halongenated

§ 108.458 General.

Halongenated gas extinguishing systems may be installed if approved by the Commandant.

Foam Extinguishing Systems

§ 108.459 Number and location of outlets.

(a) A foam extinguishing system in a space must have enough outlets to spread a layer of foam of uniform thickness over the deck or bilge areas of the space.

(b) A foam extinguishing system in a space that has a boiler on a flat that is open to or can drain into a lower portion of the space must have enough outlets to spread a layer of foam of uniform thickness over the—

(1) Flat; and

(2) Deck or bilge areas of the space.

(c) A foam extinguishing system for a tank must have enough outlets to spread a layer of foam of uniform thickness over the surface of the liquid in the tank.

§ 108.461 Coamings.

Each machinery flat in a space that has a foam extinguishing system must have coamings on all openings except deck drains that are high enough to retain spilled oil and foam on the flat.

§ 108.463 Foam rate: protein.

(a) If the outlets of a protein foam extinguishing system are in a space, the foam rate at each outlet must be at least 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered by the system.

(b) If the outlets of a protein foam extinguishing system are in a tank, the foam rate at each outlet must be at least 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of liquid surface in the tank.

§ 108.467 Water supply.

The water supply of a foam extinguishing system must not be the water supply of the fire main system on the unit unless when both systems are operated simultaneously—

(a) The water supply rate to the foam production equipment meets the requirements of this section; and

(b) Water supply rate to the fire hydrants required by § 108.415(a) of this subpart allows compliance with the pressure requirement in that section.

§ 108.469 Quantity of foam producing materials.

(a) Except as provided in paragraph (b) of this section, each foam extinguishing system with outlets—

(1) In a tank must have enough foam producing material to discharge foam for at least 5 minutes at each outlet; and

(2) In a space must have enough foam producing material to discharge foam for at least 3 minutes at each outlet.

(b) If a foam system has outlets in more than one tank or space, the system need have only enough foam producing material to cover the largest space that the system covers or, if the liquid surface of a tank covered by the system is larger, the tank with the largest liquid surface.

§ 108.471 Water pump.

Each water pump in a foam extinguishing system must be outside each machinery space in which the system has outlets and must not receive power from any of those spaces.

§ 108.473 Foam system components.

(a) Each foam agent, each tank for a foam agent, each discharge outlet, each control, and each valve for the operation of a foam extinguishing system must be approved by the Commandant.

(b) Each foam agent tank and each control and valve for the operation of a foam extinguishing system with outlets in a space must be outside the space and must not be in a space that may become inaccessible if a fire occurs in the space.

(c) Each control for a foam extinguishing system with outlets in a space must be near a main escape from the space.

§ 108.475 Piping.

(a) Each pipe, valve, and fitting in a foam extinguishing system must meet the applicable requirements in Subchapter F of this chapter.

(b) Each pipe, valve, and fitting made of ferrous material must be protected inside and outside from corrosion.

(c) Each pipe, valve, and fitting must have support and protection from damage.

(d) Each foam extinguishing system must have enough—

(1) Dirt traps to prevent the accumulation of dirt in its pipes; and

(2) Drains to remove liquid from the system.

(e) Piping in a foam extinguishing system must be used only for discharging foam.

§ 108.477 Fire hydrants.

(a) If a fixed foam extinguishing system has outlets in a main machinery space, at least 2 fire hydrants, in addition to the fire hydrants required by § 108.423 of this subpart, must be installed outside the entrances to the space with each at a separate entrance.

(b) Each hydrant must have enough hose to spray any part of the space.

(c) Each hose must have a combination nozzle and applicator.

Fire Protection for Helicopter Facilities

§ 108.486 Helicopter decks.

At least two of the access routes to the helicopter landing deck must each have a fire hydrant on the unit's fire main system located next to them.

§ 108.487 Helicopter deck fueling operations.

(a) Each helicopter landing deck on which fueling operations are conducted must have a fire protection system that discharges protein foam, or aqueous film forming foam.

(b) Each foam system must—

(1) Have enough foam agent to discharge foam continuously for at least 5 minutes at maximum discharge rate;

(2) Have at least the amount of foam agent needed to cover an area equivalent to the swept rotor area of the largest helicopter for which the deck is designed with foam at—

(i) If protein foam is used, 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes;

(ii) If aqueous film forming foam is used, 4.07 liters per minute for each square meter (.1 gallons per minute for each square foot) of area covered for five minutes; and

(3) Be capable of discharging from each hose at 7 kilograms per square centimeter (100 pounds per square inch) pressure—

(i) A single foam stream at a rate of at least 340 liters (90 gallons) per minute; and

(ii) A foam spray at a rate of at least 190 liters (50 gallons) per minute.

(c) Each system must have operating controls at each of its hose locations, be protected from icing and freezing, and be capable of operation within 10 seconds after activation of its controls.

(d) Each system must have at least one hose at each of the two access routes required by § 108.235(e) of this Part. Each hose must be reel mounted and long enough to cover any point on the helicopter deck. Each hose that discharges foam must have a nozzle that has foam stream, foam spray, and off positions.

§ 108.489 Helicopter fueling facilities.

(a) Each helicopter fueling facility must have a fire protection system that discharges one of the following agents in the amounts prescribed for the agents over the area of the fuel containment systems around marine portable tanks, fuel transfer pumps and fuel hose reels:

(1) Protein foam at the rate of 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes.

(2) Aqueous film forming foam at the rate of 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of area covered for five minutes.

(3) 22.5 kilograms (50 pounds) of dry chemical (BV semi-portable) for each fueling facility of up to 27.87 square meters (300 square feet).

(b) If the fire protection system required by § 108.487 of this subpart is arranged so that it covers both a helicopter fueling facility and a landing deck, the system must have the quantity of agents required by this section in addition to the quantity required by § 108.487.

Hand Portable and Semiportable Fire Extinguishing Systems

§ 108.491 General.

Each hand portable and semiportable fire extinguisher on a unit must be approved under Subpart 162.028 or 162.039 of this chapter.

§ 108.493 Location.

(a) Each unit must have the hand portable and semiportable fire extinguishers prescribed in Table 108.495(a) of this subpart and installed in the locations prescribed in the table.

(b) Each portable and semi-portable fire extinguisher must be visible and readily accessible.

(c) The location, size, and number of each portable and semiportable fire extinguisher on a unit must be acceptable to the OCMI. The OCMI may prescribe additional extinguishers that he considers necessary for fire protection on the unit.

(d) Each hand portable and semiportable fire extinguisher that is required on its nameplate to be protected from freezing must be located where freezing temperatures do not occur.

§ 108.495 Spare charges.

(a) Each unit must have enough spare charges for 50 percent of the hand portable fire extinguishers required under Table 108.495(a) of this subpart that are rechargeable by personnel on the unit.

(b) If a unit has extinguishers that cannot be recharged by personnel on the unit, it must also have at least one spare extinguisher for each classification and variety of those extinguishers.

TABLE 108.495(a)

HAND PORTABLE FIRE EXTINGUISHERS AND SEMIPORTABLE FIRE-EXTINGUISHING SYSTEMS

Space	Classification (see Table 108.495(b))	Quantity and Location
Safety Areas		
Wheelhouse and control room	C-I	2 in vicinity of exit.
Stairway and elevator enclosure		None required.
Corridors	A-II	1 in each corridor not more than 45 meters (150 feet) apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations		None required
Radio room	C-I	2 in vicinity of exit.
Accommodations		
Staterooms, toilet spaces, public spaces, offices, lockers, small storerooms, and pantries, open decks, and similar spaces		None required.
Service spaces		
Galleys	B-II or C-II	1 for each 232 square meters (2,500 square feet) or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B-II	1 outside each room in vicinity of exit.
Storerooms	A-II	1 for each 232 square meters (2,500 square feet) or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Work shop and similar spaces	C-II	1 outside each space in vicinity of an exit.

Space	Classification (see Table 108.495(b)	Quantity and Location
Machinery spaces		
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel oil units.	B-II B-V	2 required in each space. 1 required in each space.
Internal combustion or gas turbine propelling machinery spaces	B-II B-III	1 for each 1000 brake horsepower but not less than 2 nor more than 6 in each space. 1 required in each space. See Note 1.
Motors or generators of electric propelling machinery that do not have an enclosed ventilating system.	C-II	1 for each motor or generator
Motors and generators of electric propelling machinery that have enclosed ventilating systems.		None required.
Auxiliary spaces		
Internal combustion engines or gas turbine.	B-II	1 outside the space containing engines or turbines in vicinity of exit.
Electric emergency motors or generators.	C-II	1 outside the space containing motors or generators in vicinity of exit.
Steam driven auxiliary machinery		None required.
Trunks to machinery spaces		None required.
Fuel tanks		None required.
Miscellaneous areas		
Helicopter Landing Decks	B-V	1 at each access route.
Helicopter Fueling Facilities	B-IV	1 at each fuel transfer facility. See Note 2.
Drill floor	C-II	2 required
Cranes with Internal Combustion Engines	B-II	1 required

Note: 1. Not required where a fixed carbon dioxide system is installed.
2. Not required where a fixed foam system is installed in accordance with § 108.489 of this subpart.
3. For outside use, double the quantity of agent that must be carried.

TABLE 108.495(b)

Classification Type	Size	Water liters (gallons)	Foam liters (gallons)	Carbon dioxide kilograms (pounds)	Dry chemical kilograms (pounds)
A	II	9.5(2 1/2)	9.5 (2 1/2)		2.25 (5)[3]
B	I		4.7 (1 1/4)	1.8 (4)	.9 (2)
B	II		9.5 (2 1/2)	6.7 (15)	4.5 (10)
B	III		45.5 (12)	15.8 (35)	9.0 (20)
B	IV		7.6 (20)	22.5 (50)	13.5 (30)
B	V		152 (40)	45 (100)	22.5 (50)
C	I			1.8 (4)	.9 (2)
C	II			6.7 (15)	4.5(10)
C	III			15.8 (35)	9.0 (30)
C	IV			22.5 (50)	13.5 (30)

Note 1: Fire extinguishers are designated by type as follows:
(a) "A" for fires in combustible materials such as wood.
(b) "B" for fires in flammable liquids and greases.
(c) "C" for fires in electrical equipment.

2: Fire extinguishers are designated by size where Size "I" is the smallest and size "V" is the largest. Sizes "I" and "II" are hand portable extinguishers and sizes "III", "IV", and "V" are semiportable extinguishers.

3: Must be specifically approved as a Type A, B, or C extinguisher.

MISCELLANEOUS EQUIPMENT

§ 108.497 Fireman's outfits.

Each unit must have at least 2 fireman's outfits. Each fireman's outfit on a unit must consist of—

(a) A self-contained breathing apparatus approved under § 160.011 of this chapter;

(b) A three-cell, explosionproof flashlight with the Underwriter's Laboratories, Inc., label and set of spare batteries for the flashlight;

(c) An oxygen and explosive meter with the Underwriter's Laboratories, Inc. label or the Factory Mutual label;

(d) A lifeline that—

(1) Is attached to the self-contained breathing apparatus;

(2) Is made of bronze wire rope, inherently corrosion resistant steel wire rope, or galvanized or tinned steel wire rope;

(3) Is made up of enough 15.2 meters (50 foot) or greater lengths of wire rope to permit use of the outfit in any location on the unit;

(4) Has each end fitted with a hook with a 16 millimeters (⅝ inch) throat opening for the keeper; and

(5) Has a minimum breaking strength of 680 kilograms (1,500 pounds).

(e) Boots and gloves that are made of rubber or other electrically non-conductive material;

(f) A helmet that meets the requirements in ANSI Z-89.1-1969; and

(g) Clothing that protects the skin from scalding steam and the heat of fire and that has a water resistant outer surface.

§ 108.499 Fire axes.

Each unit must have at least two fire axes.

Subpart F—Lifesaving Equipment

§ 108.501 Survival capsule.

For the purposes of this subpart, the term lifeboat includes survival capsules.

§ 108.503 Lifeboats.

(a) Each unit with 30 persons or less on board must have at least one lifeboat. Each unit with more than 30 persons on board must have at least two lifeboats. The total number of lifeboats on a unit must accommodate all personnel on board.

(b) Each lifeboat on a unit must be approved under Subpart 160.035 of this chapter.

(c) Each lifeboat on a unit must be motor propelled and have an installed cover of international orange that provides protection from exposure and fire during operation of the lifeboat.

(d) Each lifeboat on a unit must have the equipment required by § 94.20-10 of this chapter for a lifeboat on an ocean or coastwise vessel other than a seagoing barge, except a ditty bag and a protective cover, and must have a list of that equipment. Except for boat hooks, the equipment and list must be securely stowed in the lifeboat. The equipment must meet the requirements in § 94.20-15 of this chapter.

§ 108.505 Liferafts.

(a) Each unit must have enough inflatable liferafts to accommodate at least 100 percent of the persons on board.

(b) Each inflatable liferaft on a unit must—

(1) Be approved under Subpart 160.051 of this chapter as an inflatable liferaft intended for an ocean service vessel; and

(2) Have a carrying capacity of not less than 6 nor more than 25 persons.

(c) Lifeboats may be substituted for inflatable liferafts.

§ 108.506 Lifeboat and lifeboat launching capability.

(a) Each lifeboat and liferaft on a surface type unit must be capable of being launched to the water at the highest operating draft when the unit has an adverse list up to 15° or trim up to 10°.

(b) Each lifeboat and liferaft on a non-surface type unit must be capable of being launched to the water at the highest operating draft when the unit has an adverse list and trim, the amount of which is determined by the characteristics of the unit.

§ 108.507 Launching equipment for lifeboats.

(a) Each unit must have the following launching equipment for each lifeboat:

(1) Mechanical disengaging apparatus that is approved under Subpart 160.033 of this chapter.

(2) Gravity davits that are approved under Subpart 160.032 of this chapter.

(3) A winch that is approved under Subpart 160.015 of this chapter.

(4) A means to hold the lifeboat steady in a location that allows a person to enter it.

(5) Wire falls that are—

(i) Equal or superior to 6 x 19 regular lay filler wire pre-lubricated during construction;

(ii) Not more than 2 part falls; and

(iii) Designed to have a minimum breaking strength of at least six times the maximum working load.

(6) Blocks, if necessary to allow the falls to lead freely from the drum of the winch, that—

(i) Have sheaves each with a diameter measured from the base of the groove in the sheave that is at least 12 times as large as the diameter of the fall passing over the sheave;

(ii) Have a means to lubricate the moving parts of the blocks; and

(iii) Are designed to have a minimum breaking strength of at least six times the maximum working load.

(b) If a lifeboat is mounted more than 9.2 meters (30 feet) above the design waterline of the unit, the lowering mechanism for the lifeboat must be operative from the lifeboat and from the unit.

(c) Each exposed wire fall on a unit must have a cover or means of protection from damage or fouling.

(d) The winch controls on the unit must be located where the operator can observe the lifeboat launching.

§ 108.508 Launching equipment for davit launched inflatable liferafts.

(a) Each unit that has davit launched inflatable liferafts must have the following launching equipment at each launching station:

(1) Winches that are approved by the Commandant.

(2) Mechanical disengaging apparatus that is approved by the Commandant.

(3) Davits that are approved by the Commandant.

(4) Load beaming components that meet §§ 108.507(a)(5), 108.507(c), and 108.509.

(5) A means to hold the liferaft against the unit that allows a person to enter the liferaft.

(6) A means to rapidly retrieve the falls if the station has more than one liferaft.

(b) The launching equipment must be capable of being operated by a person in the liferaft and a person on the unit.

(c) The winch controls on the unit must be located where the operator can observe the liferaft launching.

(d) The launching equipment must be arranged so that a loaded liferaft does not have to be lifted before it is lowered.

§ 108.509 Wire fall fleet angle.

(a) The portion of a wire fall between the drum of a winch on a unit and the first sheave over which the wire fall passes must have a fleet angle that is less than 8 degrees if the drum is a grooved drum and less than 4 degrees if the drum is a nongrooved drum.

(b) "Fleet angle" is the angle made by two lines that intersect at the center of the sheave. One line is perpendicular to the axis of the drum and the other passes through either end of the drum at its axis.

§ 108.510 Hydrostatic releases.

Each inflatable liferaft that is not intended for davit launching must have—

(a) A hydrostatic release approved under Subpart 160.062 of this chapter; or

(b) A means to ensure that the liferaft will float free if the unit sinks.

§ 108.511 Lifeboat and liferaft arrangement.

The lifeboats and liferafts on a unit must be arranged—

(a) To provide ready access to them;

(b) So that a fire or other casualty does not immobilize all lifeboats and liferafts;

(c) So that they are accessible for inspection, maintenance, and testing;

(d) In locations clear of overboard discharge lines, propellers, and hull obstructions; and

(e) In locations to launch as designed.

§ 108.514 Life preservers.

(a) Each unit must have enough adult life preservers for 125% of the persons on board.

(b) Each unit must have lockers, boxes, closets, shelves, or racks in readily accessible locations in berthing areas, watch stations, or other work areas for the stowage of life preservers. The stowage containers must not be capable of being locked.

(c) Each life preserver on a unit must be approved under Subpart 160.002, 160.005, or 160.055 of this chapter as a Type I—personal flotation device.

(d) Each life preserver on a unit must have a whistle that is—

(1) Of a ball-type;

(2) Corrision resistant; and

(3) Attached to the life preserver by a 1 meter (3 foot) lanyard that—

(i) Does not have hooks, snaps, clips, or other metal connecting devices;

(ii) Allows the whistle to extend at least 38 centimeters (15 inches) from the top of the life preserver; and

(iii) Is coiled and bound with breakable thread.

§ 108.515 Ring life buoys.

(a) Each unit must have at least eight ring life buoys and mounting racks.

(b) Each ring life buoy on a unit must—

(1) Have a mounting rack that secures the buoy and allows it to be easily removed from the rack;

(2) Be approved under Subpart 160.009 or 160.050 of this chapter.

(c) At least four ring life buoys on a unit must each have a waterlight attached to the buoy by a 1 to 2 meters (3 to 6 foot) lanyard. Each waterlight must be approved under Subpart 161.010 of this chapter.

(d) At least two ring life buoys that have waterlights must each—

(1) Have a smoke signal approved under Subpart 160.057 of this chapter that self-activates upon contact with the water;

(2) Have a releasing mechanism that can be operated from the bridge, except that if the bridge is not continuously manned the mechanism must be capable of operation from a location authorized by the OCMI.

(3) Be mounted in a location where the buoy, if released by the releasing mechanism, will drop into the water.

(e) At least one ring life buoy on each side of the unit must have a bouyant line attached to the buoy that is 1½ times the distance from the buoy to the design waterline of the unit or 15 fathoms in length, whichever is greater.

(f) Each ring life buoy on a unit must be readily accessible to persons on board.

§ 108.517 Line throwing appliance.

(a) Each unit on an international voyage must have at least one impulse projected rocket type line throwing appliance that is approved under Subpart 160.040 of this chapter.

(b) Each unit not on an international voyage must have—

(1) An impulse projected rocket type line throwing appliance that is approved under Subpart 160.040 of this chapter; or

(2) A shoulder type line throwing gun approved under Subpart 160.031 of this chapter.

§ 108.519 Portable radio apparatus.

Each unit on an international voyage must have a portable radio apparatus that meets the requirements of the Federal Communications Commission.

§ 108.521 Distress signals.

(a) Each self-propelled unit must have at least 12 hand held, rocket-propelled, parachute, red flare, distress signals. Each distress signal on a unit must be approved under Subpart 160.036 of this chapter.

(b) Each distress signal must be stowed in a portable, watertight, and noncorrosive container on the bridge or, if the unit does not have a bridge, in the control room.

§ 108.523 EPIRB.

Each self-propelled unit must have a Class A emergency position indicating radio beacon (EPIRB). Each EPIRB on a unit must be approved under Subpart 161.010 of this chapter.

§ 108.525 Means of embarkation.

(a) Except as provided in paragraph (c), each unit must have a chain suspension ladder approved under subpart 160.017 of this chapter for each lifeboat installation where the lifeboat is not equipped with a self-lowering device.

(b) Each chain suspension ladder must extend to the unit's light loadline with the unit at a 15° list away from the side where the ladder is installed.

(c) If a chain suspension ladder cannot be supported against a vertical flat surface, a fixed ladder must be installed; however no more than four fixed ladders are required.

(d) Each inclined fixed ladder must—

(1) Be at least 71 centimeters (28 inches) wide; and

(2) Have a pitch of 50° or less.

(e) Each vertical fixed ladder must meet the requirements of ANSI Code A14.3 for Fixed Ladders, except—

(1) Vertical bars in cages must be open at least 50 centimeters (20 inches) on one side for the length of the ladder; and

(2) No vertical fixed ladder may be made of wood.

§ 108.527 Means of abandonment.

Portable slides, safety booms, moveable ladders, elevators, and other means of abandonment may be installed if approved by the Commandant.

Subpart G—Cranes and Power Operated Industrial Trucks

CRANES

§ 108.601 Crane design.

(a) Each crane and crane foundation on a unit must be designed in accordance with the American Petroleum Institute Specification for Offshore Cranes, API Spec. 2C, Second Edition, February, 1972 (with supplement 2).

(b) In addition to the design requirements of paragraph (a), each crane must have the following:

(1) Each control marked to show its function.

(2) Instruments with built-in lighting.

(3) Fuel tank fills and overflows that do not run onto the engine exhaust.

(4) No gasoline engines.

(5) Spark arrestors fitted on engine exhaust pipes.

POWER OPERATED INDUSTRIAL TRUCKS

§ 108.611 Power operated industrial trucks: definition.

For the purposes of § 108.613 through § 108.615, "power industrial truck" means a tractor, lift truck, or specialized industrial truck used for material handling on a unit.

§ 108.613 Power operated industrial trucks.

(a) Each power operated industrial truck used on a unit must be designated as follows:

(1) "E"—electrically powered trucks that have safeguards against inherent sources of ignition.

(2) "EE"—electrically powered trucks that have the requirements for "E" trucks, and completely enclosed electric motors and equipment.

(3) "EX"—electrically powered trucks whose electrical fittings and equipment are designed, constructed, and assembled to permit the trucks to be used in atmospheres containing flammable vapors or dusts.

(4) "D"—diesel powered trucks that have safeguards against inherent sources of ignition.

(5) "DS"—diesel powered trucks that are provided with safeguards to the exhaust, fuel, and electrical systems not provided on a "D" truck.

(b) Each power operated industrial truck used on a unit must be approved and designated by a testing laboratory listed in paragraph (c) of this section.

(c) The Coast Guard recognizes the following testing laboratories for the purposes of this section:

(1) Underwriters' Laboratories, Inc., P.O. Box 247, Northbrook, Illinois, 60092.

(2) Factory Mutual Laboratories, Engineering Divisions, 1115 Boston Providence Turnpike, Norwood, Massachusetts 02062.

(d) Each power operated industrial truck used on a unit must have at least the following safety features—

(1) A warning device that can be heard above normal background noises.

(2) A driver's overhead guard.

(3) If the truck has a fork lift—

(i) A vertical load back rest or rack to prevent the load from falling toward the driver when the mast is in a position of maximum backward tilt;

(ii) A means of securing the forks to the carriage to prevent unintentional lifting of the toe;

(iii) A means of securing fork extensions and other attachments to prevent lifting or displacement on the primary forks; and

(iv) A factor of safety for the forks of at least three to one, based on the elastic limit of the fork material.

(4) Guards on each exposed wheel to prevent the wheel from throwing particles at the operator.

(5) A steering knob mounted within the perimeter of the wheel, if used on a steering mechanism that allows the wheel to spin as a result of road reaction, that is—

(i) Mushroom type that engages the palm of the operator's hand; or

(ii) Arranged in some other manner to prevent injury to the operator.

(6) Steering controls that are—

(i) Within the clearances of the truck; or

(ii) Guarded so that movement of the controls will not result in injury to the operator when the truck is passing an obstruction.

§ 108.615 Charging facilities for battery powered industrial trucks.

Each supply or charging circuit for charging batteries of powered industrial trucks must be connected to the truck by a portable plug that is—

(a) Break away type; and

(b) Connected to the charging outlet so that any movement of the truck away from the charging station—

(1) Breaks the connection;

(2) Does not expose any live parts to contact with a conducting surface or object; and

(3) Does not allow the plug to fall on to the deck.

Subpart J—Equipment Markings and Instructions

§ 108.621 Equipment markings: general.

Each marking required in this subpart must be—

(a) Printed in English;

(b) In red letters with a contrasting background;

(c) Permanent;

(d) Easy to be seen; and

(e) At least 1.3 centimeters (½ inch) in height; unless otherwise provided.

§ 108.623 General alarm bell switch.

Each general alarm bell switch must be marked "general alarm" on a plate or other firm noncorrosive backing.

§ 108.625 General alarm bell.

Each general alarm bell must be identified by marking "General Alarm—When Bell Rings Go To Your Station" next to the bell.

§ 108.627 Carbon dioxide alarm.

Each carbon dioxide alarm must be identified by marking: "When Alarm Sounds Vacate At Once. Carbon Dioxide Being Released" next to the alarm.

§ 108.629 Fire extinguishing system branch line valve.

Each branch line valve of each fire extinguishing system must be marked with the name of the space or spaces it serves.

§ 108.631 Fixed fire extinguishing system controls.

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked by one of the following: "Carbon Dioxide Fire Apparatus", "Foam Fire Apparatus", or "Water Spray Fire Apparatus" in letters at least 5 centimeters (2 inches) high.

(b) Instructions for the operation of a fixed fire extinguishing system must be posted next to a fire apparatus described in paragraph (a) of this section.

§ 108.633 Fire stations.

Each fire station must be identified by marking: "Fire Station No. ——" next to the station in letters and numbers at least 5 centimeters (2 inches) high.

§ 108.635 Self-contained breathing apparatus.

Each locker or space containing a self-contained breathing apparatus must be marked: "Self Contained Breathing Apparatus".

§ 108.636 Work vests.

Each space containing a work vest must be marked: "WORK VEST."

§ 108.637 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher must be marked with a number that identifies it in relation to all other hand portable fire extinguishers.

(b) The location of each hand portable fire extinguisher must be marked with the same number that is marked on the extinguisher.

§ 108.639 Emergency lights.

Each emergency light must be marked: "E".

§ 108.641 Instructions for changing steering gear.

Instructions stating in order the different steps to be taken for changing to emergency and secondary steering gear must be posted in the steering gear room and at each secondary steering station in 1.3 centimeters (½ inch) letters and numerals of contrasting color to the background.

§ 108.643 Rudder orders.

At each steering station, the direction which the wheel or steering device must be moved for right rudder or left rudder must be marked in letters of contrasting color to the background on the wheel or steering device or in a place that is directly in the helmsman's line of vision to indicate "Right Rudder" and "Left Rudder".

§ 108.645 Lifeboats.

(a) The bow of each lifeboat must be marked in letters and numbers of contrasting color to the background with—

(1) The name and port of registry of the unit in letters at least 7.5 centimeters (3 inches) high;

(2) The number of the boat in numbers at least 7.5 centimeters (3 inches) high; and

(3) Its cubic capacity and the number of persons allowed in the boat in letters and numbers at least 4 centimeters (1½ inches) high.

(b) Each mechanical disengaging apparatus control lever must be—

(1) colored red; and

(2) marked in raised letters of a contrasting color to the background: "DANGER—LEVER DROPS BOAT" or "DANGER—LEVER RELEASES HOOKS."

(c) The location of each mechanical disengaging apparatus control lever must be marked by a white band approximately 30 centimeters (12 inches) wide from the keel to each side bench.

§ 108.647 Inflatable liferafts.

Each inflatable liferaft must be identified by marking: "INFLATABLE LIFERAFT NO. -- . . . PERSONS CAPACITY" next to the liferaft—

(a) in letters at least 4 centimeters (1½ inches) high; and

(b) in a contrasting color to the background.

§ 103.649 Life preservers and ring life buoys.

(a) Each life preserver must be marked in a color in contrast to the life preserver with the unit's name.

(b) Each locker box or closet used for stowing life preservers must be marked "LIFE PRESERVERS".

(c) Each ring life buoy must be marked in a color in contrast to the ring life buoy with the unit's name and port of registry.

§ 108.651 Portable magazine chests.

Each portable magazine chest must be marked: "PORTABLE MAGAZINE CHEST — FLAMMABLE — KEEP LIGHTS AND FIRE AWAY" in letters at least 7.5 centimeters (3 inches) high.

§ 108.653 Helicopter facilities.

(a) Each helicopter fueling facility must be marked adjacent to the fueling hose storage: "Warning—Helicopter Fueling Station—Keep Lights and Fire Away".

(b) Each storage tank for helicopter fuel must be marked: "Danger—Flammable Liquid".

(c) Each access to a helicopter landing area must be marked: "Beware Of Tail Rotor."

(d) Each marking required by this section must be in letters at least 7.5 centimeters (3 inches) high.

§ 108.655 Liferaft instructions.

Placards approved by the Commandant that contain instructions for launching and inflating inflatable liferafts must be conspicuously posted.

§ 108.657 Unit markings.

The hull of each unit must be marked in accordance with Parts 67 and 69 of this chapter.

§ 108.659 Breeches buoy and lifesaving signal instructions.

Instructions on Form CG-811 for the use of breeches buoys and lifesaving signals must be posted so that they can be easily seen in the pilothouse or control room, engine room, and each living space.

§ 108.661 Unit markings: draft marks.

(a) Each unit must have draft marks for each foot of immersion—

(1) If the unit is a surfact unit, on both the port and starboard sides of the stem and the stern-post or rudderpost or at any other place at the stern of the unit as may be necessary for easy observance;

(2) If the unit is a self-elevating unit, near each corner of the hull but not more than 4 required; and

(3) If the unit is a column-stabilized unit, on each corner column, continuing to the footing or lower displacement hull.

(b) The bottom of each mark must be at the draft indicated by that mark.

(c) Each mark must be—

(1) In numerals 15 centimeters (6 inches) high ;and

(2) In contrasting color to the background.

(d) For the purposes of this section, "draft" means the distance from the bottom of the keel or the lowest shell plate on the outer surface of the unit to the surface of the water, except that where a unit has a permanent appendage extending below the bottom of the keel, "draft" means the distance from the lowest part of the appendage to the surface of the water.

§ 108.663 Unit markings: load line.

Each unit that is assigned a load line must have the load line marked in accordance with Part 42 of this Chapter.

§ 108.665 Appliances for watertight integrity.

Each appliance for watertight integrity must be marked in letters of contrasting color to the background: "Keep Closed".

Subpart K—Miscellaneous Equipment

§ 108.697 Buoyant work vest.

Each buoyant work vest on a unit must be approved under § 160.053 of this chapter.

§ 108.699 Substitution of life preservers.

A work vest may not be substituted for a required life preserver—

(a) for the life saving equipment requirements of this part; or

(b) for use during drills and emergencies.

§ 108.701 Sounding equipment.

Each self-propelled unit must have a mechanical or electronic sounding apparatus.

§ 108.703 Self-contained breathing apparatus.

(a) Each unit must have a self-contained breathing apparatus to be used as protection from gas leaking from a refrigeration unit.

(b) The self-contained breathing apparatus required in § 108.497 may be used for this purpose.

§ 108.705 Anchors, chains, wire rope, and hausers.

(a) Each unit must be fitted with anchors, chains, wire rope, and hausers in agreement with the standards established by the American Bureau of Shipping.

(b) Units which are equipped with anchors used as operational equipment are not required to have additional anchors if the operational anchors meet the requirements of paragraph (a).

§ 108.707 First aid kit.

Each unit must have a first-aid kit approved by the Mining Enforcement Safety Administration of a size suitable for the number of persons on the unit that is stowed in a location that is accessible to persons on board.

§ 108.709 Litter.

Each unit must have a Stokes litter that is stowed in a location that is accessible to the persons on board.

§ 108.711 Pilot ladders.

(a) Except as provided in paragraph (c), each unit which normally uses a pilot must have a pilot ladder in addition to the ladders required in § 108.525.

(b) Each unit which has a pilot ladder must have the following:

(1) Spreaders.

(2) A man rope.

(3) A safety line.

(c) A pilot ladder is not required if—

(1) the vertical distance from sea level to the deck of the unit is more than 9 meters (approximately 30 feet); or

(2) there is no flat vertical surface to support a pilot ladder.

(d) Illumination over the side of the unit and on the deck where the pilot boards the unit must be provided.

§ 108.713 International code of signals.

Each vessel on an international voyage which is required to carry a radiotelegraph or radiotelephone installation in accordance with Chapter IV of the Safety of Life at Sea Convention, 1960, must carry the International Code of Signals.

§ 108.715 Magnetic compass and gyrocompass.

(a) Each self-propelled unit in ocean or coastwise service must have a magnetic compass.

(b) Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have a gyrocompass in addition to the magnetic compass required in paragraph (a).

(c) Each unit that is required to have a gyrocompass must have an illuminated repeater for the gyrocompass that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

§ 108.717 Radar.

Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have—

(a) A marine radar system for surface navigation; and

(b) Facilities on the bridge for plotting radar readings.

PART 109—OPERATIONS

Subpart A—General

§ 109.101 Applicability.

No unit may be operated unless it complies with the regulations in this part.

§ 109.103 Safety construction certificate.

No unit may embark on an international voyage unless it is issued—

(1) a safety construction certificate by the American Bureau of Shipping or the Coast Guard; and

(2) a safety equipment certification by the Coast Guard.

§ 109.107 Designation of master or person in charge.

The owner of a unit or his agent shall designate an individual to be the master or person in charge of the unit.

§ 109.109 Responsibilities of master or person in charge.

The master or person in charge shall be fully cognizant of the provisions in the Operating Manual required by § 109.121.

§ 109.121 Operating manual.

(a) An operating manual must be prepared for each unit.

(b) Each operating manual must be approved by the Coast Guard.

(c) The operating manual must contain guidance for the safe operation of the unit.

(d) The operating manual must contain the following information:

(1) A general description of the unit, including lightship data.

(2) Data for each operating mode, including design loading, wave height, and draft.

(3) General arrangement showing watertight compartments, closures, vents, permanent ballast, and allowable deck loadings.

(4) Hydrostatic curves or equivalents.

(5) Capacity plan showing capacities of tanks, center of gravity, and free surface corrections.

(6) Instructions for the operation of the unit while—

(i) preparing for the passage of a severe storm, including the specific actions and approximate length of time necessary to attain each level of preparedness; and

(ii) changing operating condition.

(7) Stability information setting forth maximum KG versus draft curve, or other parameters based upon compliance with the intact and damaged stability criteria.

(8) Examples of loading conditions for each mode of operation, and a means for evaluation of other loading conditions.

(9) Inherent limitations of operation.

(10) General guidance and precautions regarding unintentional flooding.

Subpart B—Tests, Drills, and Inspections

§ 109.201 Steering gear, whistles, general alarm, and means of communication.

The master or person in charge shall ensure that—

(a) Steering gear, whistles, general alarm bells, and means of communication beaween the bridge or control room and the engine room on self propelled units are inspected and tested—

(1) Within 12 hours before getting under way; and

(2) At least once each week if under way or on station; and

(b) Whistles and general alarm bells on all other units are inspected examined and tested at least once each week.

§ 109.203 Sanitation.

(a) The master or person in charge shall ensure that the accommodation spaces are in a clean and sanitary condition.

(b) The chief engineer shall ensure that the engineering spaces are in a clean and sanitary condition.

§ 109.205 Inspection of boilers and machinery.

The chief engineer or engineer in charge, before he assumes charge of the boilers and machinery of a unit shall inspect the boilers and machinery and report to the master or person in charge and the Officer in Charge, Marine Inspection, any parts that are not in operating condition.

§ 109.207 Line-throwing equipment.

(a) The master or person in charge shall ensure that personnel are instructed in the use of line-throwing equipment.

(b) The master or person in charge shall ensure that each line throwing appliance is tested by firing it at least once every four months. A service line may not be used for test firings.

§ 109.208 EPIRB.

The master or person in charge shall ensure that each EPIRB required in § 108.523 of this subchapter is tested monthly using the integrated test circuit and output indicator.

§ 109.209 Appliances for watertight integrity.

(a) Before getting underway, the master or person in charge shall ensure that each appliance for watertight integrity is closed and watertight.

(b) If existing conditions warrant, the master or person in charge may permit appliances for watertight integrity to be used while afloat.

§ 109.211 Testing of emergency lighting and power systems.

The master or person in charge shall ensure that—

(a) Each emergency lighting and each emergency power system is tested at least once each week;

(b) Each emergency generator is tested at least once each month by operating it under load for at least 2 hours; and

(c) Each storage battery for emergency lighting and power systems is tested under actual connected load for—

(1) A period of at least 12 hours; or

(2) A period of at least 2 hours if—

(i) After the 2 hour test period, voltage values under load or electrolyte specific gravity are measured and these values may be extrapolated to approximate the values that would result following a 12 hour test period; and

(ii) The capacity of the battery corresponding to the extrapolated values of voltage or specific gravity are sufficient to supply the actual connected load for 12 hours.

§ 109.213 Fire drill.

The master or person in charge shall conduct a fire drill at least once each week and shall ensure that—

(a) All personnel report to their stations, and demonstrate their ability to perform the duties assigned to them in the station bill;

(b) Each fire pump is started;

(c) Each item of rescue and safety equipment is brought from the emergency lockers; and

(d) Each watertight door which is in use while the unit is underway is operated.

§ 109.215 Boat drill.

The master or person in charge shall conduct a boat drill at least once each week, and shall ensure that—

(a) All personnel report to their stations, and demonstrate their ability to perform the duties assigned to them in the station bill;

(b) Each lifeboat is prepared for use;

(c) Weather permitting, at least one lifeboat is lowered, released and its engine started and operated; and

(d) Each person not assigned duties in the station bill is instructed in the use of life preservers.

§ 109.217 Lifeboats and lifeboat launching equipment-inspection and testing.

The master or person in charge shall ensure that—

(a) Each lifeboat is lowered to the water at least once each three months;

(b) Each lifeboat is properly equipped;

(c) The motor of each motor propelled lifeboat is operated in the ahead and the astern position for at least 5 minutes at least once each week;

(d) Each lifeboat is cleaned and inspected at least once each year;

(e) The fuel tank of each motor propelled lifeboat is emptied, and the fuel is changed at least once each year;

(f) Each rechargeable battery for each lifeboat radio is fully charged at least once each week; and

(g) Each lifeboat radio transmitter is tested at least once each week.

§ 109.219 Inflatable liferaft: servicing.

The master or person in charge shall ensure that each inflatable liferaft is serviced every 12 months or not later than the next inspection for certification provided the time since the date of the last servicing does not exceed 15 months. Except in an emergency, no servicing may be done aboard the unit.

§ 109.221 Electric power operated winches.

(a) The master or person in charge shall ensure that each lifeboat winch control apparatus, including motor controllers, emergency switches, master switches, and limit switches, is inspected at least once each 3 months.

(b) The inspection required in paragraph (a) of this section must include the removal of drain plugs from the electrical enclosures of each lifeboat winch control apparatus.

§ 109.223 Fire fighting equipment.

The master or person in charge shall ensure that each hand portable fire extinguisher, semi-portable fire-extinguisher, and fixed fire-extinguishing system is tested and inspected at least once each twelve months.

Subpart C—Operation and Stowage of Safety Equipment

§ 109.301 Maintenance of equipment.

The master or person in charge shall ensure that each item of lifesaving and firefighting equipment required by this subchapter is maintained in operative condition.

§ 109.305 Obstruction on launching decks.

The master or person in charge shall ensure that each deck from which lifeboats and liferafts are launched is kept clear of any obstruction that interferes with the immediate launching of lifeboats and liferafts.

§ 109.307 EPIRB.

The master or person in charge shall ensure that—

(a) Each EPIRB required in § 108.523 is stowed in a manner so that it will float free if the unit sinks; and

(b) Each battery of the EPIRB is replaced before the date marked on the outside of the body of the EPIRB, or after the EPIRB is used.

§ 109.313 Stowage of life preservers.

The master or person in charge shall ensure that each life preserver required in § 108.514 for each person assigned a berth, is stowed in his berthing area as provided in § 108.514(b), and that the remaining life preservers required in § 108.514(a) are stowed in each work area and watch station as provided in § 108.514(b).

§ 109.317 Replacement of distress signal and self-activated smoke signals.

The master or person in charge shall ensure that each distress signal and self-activated smoke signal is replaced not later than 36 months after the date of manufacture.

§ 109.320 Line-throwing equipment.

The master or person in charge shall ensure that—

(a) The line-throwing equipment required by § 108.517 is stowed in a readily accessible location; and

(b) The service life of rockets for impulse projected rocket type equipment is limited to a period of four years from the date of manufacture, and replacement of out-dated items is made at the first arrival in the United States, except that replacement is made in all cases within twelve months after the date of expiration.

§ 109.321 Portable radio.

The master or person in charge shall ensure that the portable radio required in § 108.519 is—

(a) Stowed in the radioroom, bridge, or a protected location near a lifeboat; and

(b) Readily accessible for transfer to a lifeboat.

§ 109.323 Manning of lifeboats and inflatable liferafts.

The master or person in charge shall—

(a) Assign to each lifeboat and each inflatable liferaft, to which seat assignments are made in the station bill—

(1) A licensed deck officer, able seaman, or certificated lifeboatman to command the lifeboat;

(2) A licensed deck officer, able seaman, or certificated lifeboatman as second in command, if the lifeboat has a capacity of more than 40 persons;

(3) A person who can operate the lifeboat's motor; and

(4) A person who can operate the portable radio, if the lifeboat has a portable radio; and

(b) Ensure that the person assigned to command a lifeboat has a list of the persons assigned to seats in the lifeboat or liferaft.

§ 109.325 Persons in command of lifeboats or liferafts.

A person assigned to command a lifeboat or liferaft shall ensure that each person assigned to the lifeboat or liferaft can perform the duties assigned to that person.

§ 109.327 Davit launched liferafts.

The master or person in charge shall ensure that no more than two davit launched liferafts are launched from each launching station.

§ 109.329 Fire pumps.

The master or person in charge shall ensure that at least one of the fire pumps required in § 108.415 is ready for use on the fire main system at all times.

§ 109.331 Firehoses and hydrants.

The master or person in charge shall ensure that—

(a) At least one length of firehose with a combination nozzle is connected to each fire hydrant required by this subchapter, at all times, except that during heavy weather a firehose in an exposed location may be temporarily removed from the first hydrant and stowed in an accessible, nearby location;

(b) A fire hose required by this subchapter is not used for any purpose other than firefighting, fire drills, and testing;

(c) Access to each fire hydrant is not blocked;

(d) Each firehose, except a firehose temporarily removed from an exposed location, is stowed on a rack or reel required by this subchapter; and

(e) Each low velocity spray applicator for a fire hose nozzle is attached to the nozzle or stowed next to the fire hydrant to which the fire hose is attached.

§ 109.333 Fire main cutoff valves.

The master or person in charge shall ensure that each fire main cutoff valve is open and sealed to prevent closing, except that a cutoff valve may be closed to protect the portion of the fire main system on an exposed deck from freezing.

§ 109.334 Working over water.

The master or person in charge shall ensure that each person working over the water is wearing a life preserver or a buoyant work vest.

§ 109.335 Stowage of work vests.

The master or person in charge shall ensure that no work vest is stowed where life preservers are stowed.

§ 109.337 Fireman's outfit.

The master or person in charge shall ensure that—

(a) At least 2 persons who are trained in the use of the fireman's outfit are on board at all times; and

(b) Each fireman's outfit and its spare equipment is stowed in a separate and accessible location.

(c) A fireman's outfit is not used for any purpose other than fire fighting except as provided in § 108.703.

§ 109.339 Location of fire axes.

The master or person in charge shall ensure that the fire axes required in § 108.499 of this subchapter are located in the enclosures for fire hoses marked in accordance with § 108.633 of this subchapter, if the fire axes are not located in plain view.

§ 109.341 Chain suspension ladders.

The master or person in charge shall ensure that each chain suspension ladder required in § 108.525(a) of this subchapter is—

(a) Kept ready for immediate use; and

(b) Stowed near the lifeboat or inflatable liferaft davits.

§ 109.343 Pilot ladders and equipment.

The master or person in charge shall ensure that the equipment required in § 108.711(b) is kept available for use with the pilot ladder required in § 108.711(a).

§ 109.345 Pilot ladder use.

The master or person in charge shall ensure that—

(a) A pilot ladder, when in use, is secured so that each step rests firmly against the side of the unit;

(b) a pilot boards a unit by means of an accommodation ladder or personnel transfer equipment if a pilot ladder is not used.

Subpart D—Reports, Notifications, and Records

Reports and Notifications

§ 109.411 Notice of casualty.

(a) The owner, agent, master, or person in charge of a unit that is involved in a marine casualty shall notify the Officer in Charge, Marine Inspection, as soon as possible after the casualty occurs, if the casualty involves any of the following:

(1) Damage to property exceeding $1,500.

(2) Damage affecting the seaworthiness of the unit.

(3) Stranding or grounding of the unit, except when the unit is grounded to conduct normal operations.

(4) Loss of life.

(5) Injury to any person incapacitating the person for more than 72 hours after the injury, except injury to a harbor worker not resulting from a unit casualty or failure of unit equipment.

(b) The notice required by this section must contain the following:

(1) Name and official number of the unit.

(2) Name of the owner or agent of the unit.

(3) Description of the casualty, including cause.

(4) Location of the unit at the time of the casualty.

(5) Nature and extent of injury to persons.

(6) Damage to property.

(c) The notice required by this section is not required to be submitted if the written report of casualty required by § 109.413 is submitted without delay.

§ 109.413 Written report of casualty.

The master or person in charge of a unit for which a report of casualty is made under § 109.411 of this subpart shall submit a report to the Officer in Charge, Marine Inspection, as soon as possible after the casualty occurs, on—

(a) Form CG–924E if the casualty involves injury to persons or loss of life; and

(b) Form CG–2692 if the casualty involves damage to property or grounding or stranding of a vessel.

§ 109.415 Retention of records after casualty.

(a) The owner, agent, master, or person in charge of a unit for which a report of casualty is made under § 109.411 of this subpart shall ensure that all records maintained on the unit are retained on board the unit for at least 3 months after the report of casualty is made or until advised by the Officer in Charge, Marine Inspection, that records need not be retained on board.

(b) The records which must be retained in accordance with paragraph (a) of this section include:

(1) Rough and smooth deck log.

(2) Rough and smooth engineroom log.

(3) Tour reports.

(4) Bell books.

(5) Navigation charts in use at the time of casualty.

(6) Navigation work books.

(7) Compass deviation cards.

(8) Gyrocompass records.

(9) Storage plans.

(10) Record of drafts.

(11) Notices to mariners.

(12) Radiograms sent and received.

(13) The radio log.

(14) Personnel list.

(15) Crane record book.

(c) The owner, agent, master, or person in charge shall, upon request, make the records described in this section available for examination by any Coast Guard official authorized to investigate the casualty.

§ 109.417 Report of damage to aid to navigation.

If a unit collides with an aid to navigation maintained by the Coast Guard, the master or person in charge shall report the collision to the Officer in Charge, Marine Inspection.

§ 109.419 Report of unsafe machinery.

If a boiler, unfired pressure vessel, or other machinery on a unit is unsafe to operate, the master or person in charge shall report the existence of the unsafe condition to the Officer in Charge, Marine Inspection.

§ 109.421 Report of repairs to boilers and pressure vessels.

Before making repairs, except normal repairs and maintenance such as replacement of valves or pressure seals, to boilers or unfired pressure vessels in accordance with § 50.05–10 of this chapter, the master or person in charge shall report the nature of the repairs to the Officer in Charge, Marine Inspection.

§ 109.423 Report of breaking safety valve seal.

(a) If a required seal on a safety valve is broken, the chief engineer or engineer in charge shall notify the Officer in Charge, Marine Inspection.

(b) The notice must—

(1) State the reason for breaking the seal; and

(2) Request that the valve be examined and adjusted.

§ 109.425 Repairs and alterations—emergency equipment.

(a) Before making repairs or alterations, except emergency repairs or alterations, to lifesaving, fire detecting or extinguishing equipment, the master or person in charge shall report the nature of the repairs or alterations to the Officer in Charge, Marine Inspection.

(b) When emergency repairs or alterations to livesaving, fire detecting or fire extinguishing equipment have been made, the master or person in charge shall report the nature of the repairs or alterations to the Officer in Charge, Marine Inspection.

Records

§ 109.431 Logbook.

(a) The master or person in charge of a unit that is required by 46 U.S.C. 201 to have an official log book shall maintain the logbook on Form CG–706. When the voyage is completed, the master or person in charge shall file the logbook with the Officer in Charge, Marine Inspection.

(b) The master or person in charge of a unit that is not required by 46 U.S.C. 201 to have an official logbook, shall maintain, on board, an unofficial logbook for making the entries required by this subpart, until the unit is reinspected or inspected for certification.

§ 109.433 Logbook entries.[1]

The master or person in charge shall ensure that the following entries are made in the logbook required by this subpart:

[1] Note.—R.S. 4290 (46 U.S.C. 201) requires that certain entries be made in an official logbook, in addition to the entries required by this section; and R.S. 4291 (46 U.S.C. 202) prescribes the manner of making those entries.

(a) The date of each test of the steering gear, whistle, general alarm, and communications equipment and the condition of the equipment.

(b) The time and date of each opening and closing of each appliance for watertight integrity not fitted with a remote operating control or alarm system and the reasons for the action.

(c) The date of each test of emergency lighting and power systems and the condition and performance of the equipment.

(d) The following information pertaining to each fire drill:

(1) Date and hour of each drill.

(2) Duration of each drill.

(3) The condition of all fire fighting equipment, watertight door mechanisms, and valves used during each drill.

(e) The following information pertaining to each boat drill:

(1) Date and hour of each drill.

(2) Duration of each drill.

(3) The number of each lifeboat swung out during each drill.

(4) The number of each lifeboat lowered during each drill.

(5) Length of time that each motor propelled lifeboat was operated during each drill.

(6) The condition of lifesaving equipment used during each drill.

(f) The date of the lifeboat equipment examination required in § 109.217 of this part.

(g) If a drill required in § 109.213 or § 109.215 of this part is not held, the reasons for not holding the drill.

(h) If a drill required in § 109.213 or § 109.215 of this part is not completed, the reasons for not completing the drill, and the date and a description of the incomplete drill.

(i) The date of each lifeboat winch inspection required in § 109.221 of this part and the condition of the winch.

(j) The fore and aft drafts, the position of the loading marks in relation to the surface of the water, and the density of the water in which the vessel is floating, if in fresh or brackish water.

(k) The date of each inspection of each accommodation space.

(l) The date of each inspection required in § 109.573 of this subpart, if performed by the master or person in charge.

NOTE: R.S. 4290 (46 U.S.C. 201) requires that certain entries be made in an official logbook, in addition to the entries required by this section; and R.S. 4291 (46 U.S.C. 202) prescribes the manner of making those entries.

§ 109.435 Record of fire fighting equipment inspection.

(a) The master or person in charge shall ensure that a record of each test and inspection required in § 109.223 of this part is maintained on board, until the unit is reinspected or inspected for certification.

(b) The record required in paragraph (a) of this section must show—

(1) The date of each test and inspection;

(2) The number or other identification of each item of equipment tested or inspected; and

(3) The name of the person, and the company he represents if any, who conducts the test or inspection.

§ 109.437 Crane record book.

The master or person in charge shall ensure that the following are maintained in a crane record book:

(a) Descriptive information which will identify each crane including—

(1) The API name plate data required by Section 11 of API Spec. 2C, Second Edition, February 1972; and

(2) The rated load chart for each line reeving.

(b) Information required by Section 3 of the American Petroleum Institute Recommended Practice for Operation and Maintenance of Offshore Cranes, API RP 2D, First Edition, October 1972.

(c) Dates and results of frequent inspections and tests.

(d) Dates and results of periodic inspections and tests.

(e) Date and result of each rated load test.

(f) Date and description of each replacement or renewal of wire rope, hooks, and other load components.

(g) Date and description of each failure of the crane, or any component or safety feature.

(h) Date and description of each repair to the crane structure, boom, or equipment.

(i) Each record and original certificate, or certified copy of a certificate of manufacturers or testing laboratories, companies, or organizations for—

(1) Loose gear;

(2) Wire rope; and

(3) The annealing of wrought iron gear.

Subpart E—Station Bill

§ 109.501 Station bill: duties of personnel.

(a) The station bill must set forth the duties and station of each person during emergencies, including an assigned seat in a lifeboat or liferaft for each person on the unit.

(b) The duties must, as far as possible, be comparable with the regular work of the individual.

(c) These duties must include:

(1) Closing airports, watertight doors, scuppers, and sanitary and other discharges that lead through the unit's hull.

(2) Stopping fans and ventilating systems.

(3) Operating all safety equipment.

(4) Preparing lifeboats and liferafts for launching.

(5) Extinguishing fires.

(6) Warning personnel of the emergency.

(7) Instructing all personnel on use and wearing of their life preservers.

(8) Directing personnel to appointed stations.

(9) Carrying the portable radio apparatus, required in § 108.519, to a lifeboat.

§ 109.503 Station bill: emergency signals.

(a) The station bill must set forth signals that—

(1) Call personnel to their stations; and

(2) Direct personnel at their stations.

(b) Emergency stations signals are established as follows:

(1) The signal to man emergency stations is a rapid succession of short soundings of both the general alarm bell and the whistle, if a whistle is installed, for a period of not less than 10 seconds.

(2) The signal to secure from emergency stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

(c) The abandon unit stations signals are established as follows;

(1) The signal to man abandon unit stations is a continuous sounding of both the general alarm and the whistle, if a whistle is installed.

(2) If whistle signals are used to direct the handling of lifeboats, they must be—

(i) One short blast to lower lifeboats; and

(ii) Two short blasts to stop lowering the lifeboats.

(3) The signal to secure from abandon unit stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

§ 109.505 Station bill: general.

The master or person in charge shall—

(a) Ensure that the station bill is prepared and maintained;

(b) Sign the station bill;

(c) Ensure that the station bill is posted in conspicuous locations on the unit; and

(d) Ensure that all persons on the unit are familiar with the station bill.

Subpart F—Cranes and Powered Industrial Trucks

§ 109.521 Cranes: general.

The master or person in charge shall ensure that each crane is operated and maintained in accordance with the API Recommended Practice for Operation and Maintenance of Offshore Cranes, API RP 2D, First Edition.

§ 109.525 Cranes: working loads.

The master or person in charge shall ensure that tables indicating the maximum safe working loads for the various working angles of the boom, where the boom is rated at varying capacities depending on the radius, and the maximum and minimum radius at which the boom may be safely used, are conspicuously posted near the controls and are visible to the operator when working the crane.

§ 109.527 Cranes: operator designation.

(a) The master or person in charge shall designate, in writing, each crane operator.

(b) The master or person in charge shall ensure that only designated operators operate cranes.

(c) The master or person in charge shall ensure that each designated operator is familiar with the provisions of the API Recommended Practice for Operation and Maintenance of Offshore Cranes, API RP 2D, First Edition.

§ 109.529 Powered industrial trucks: use.

The master or person in charge shall ensure that—

(a) Only "EX" designated trucks are used in Class I, Division 1 spaces; and

(b) Only "EE", "EX", or "DS" designated trucks are used in—

(1) Class I, Division 2 spaces; and

(2) In spaces that are within the periphery of a Class I, Division 1 space.

§ 109.531 Powered industrial trucks: ventilated spaces.

The master or person in charge shall ensure that diesel powered industrial trucks are operated only in ventilated spaces.

§ 109.533 Powered industrial trucks: rated lifting capacity.

The master or person in charge shall ensure that the rated lifting capacity of each powered industrial truck is posted on each truck.

§ 109.535 Designated refueling areas for diesel powered industrial trucks.

The master or person in charge shall designate refueling areas for diesel powered industrial trucks only on—

(a) The weather deck; or

(b) In spaces that are—

(1) Ventilated to prevent accumulation of vapors; and

(2) Located at least 3 meters (10 feet) from a source of ignition.

§ 109.537 Refueling diesel powered industrial trucks: operations.

The master or person in charge shall ensure that—

(a) Each diesel powered industrial truck is refueled only in a refueling area designated under § 109.535;

(b) Before a diesel powered industrial truck is refueled its engine is stopped;

(c) If refueling operations are conducted in an encolsed, space, no truck engine is operated in the space;

(d) Diesel powered industrial trucks are refueled from—

(1) A portable container of five gallons or less that has a self-closing spout; or

(2) If the refueling operation is on the weather deck, a pump with a hose that has a pistol grip, deadman nozzle; and

(e) Each designated refueling area has at least one four pound, dry chemical, portable fire extinguisher available during refueling operations.

§ 109.539 Recharging battery powered industrial trucks.

The master or person in charge shall ensure that batteries of powered industrial trucks are charged in a ventilated area that is not a Class I location.

Subpart G—Miscellaneous

§ 109.555 Propulsion boilers.

The master or person in charge and the engineer in charge shall ensure that—

(a) Steam pressure does not exceed that allowed by the Certificate of Inspection; and

(b) Except as provided in § 109.423, the safety valves, once set and sealed by the inspector, are not tampered with or made inoperative.

§ 109.557 Flammable and combustible liquids: carriage.

The master or person in charge shall ensure that—

(a) Flammable and combustible liquids in bulk are not carried, except as allowed by endorsement to the Certificate of Inspection;

(b) Portable tanks are handled and stowed in accordance with Subparts 98.30 and 98.35 of this Chapter, and 49 CFR Parts 170 to 189; and

(c) Grades A and lower liquids are—

(1) Authorized, by the Commandant, to be carried; and

(2) Carried only in fixed independent or integral trunks.

§ 109.558 Stores and supplies.

The master or person in charge shall ensure that dangerous articles, substances, and combustible liquids which are used on board a unit, except those used in industrial operations and as fuel for the unit's machinery, are accepted, handled, stowed, and used only in accordance with the provisions for cargo vessels in Part 147 of this Chapter.

§ 109.559 Explosives and radioactive materials.

(a) Except as authorized by the master or person in charge, no person may use explosives or radioactive materials and equipment on a unit.

(b) The master or person in charge shall ensure that explosives and radioactive materials and equipment are stored only in accordance with the provisions for cargo vessels in Part 147 of this Chapter.

§ 109.563 Posting of documents.

The master or person in charge shall ensure that the following are posted under glass in the pilot house or control center:

(a) General arrangement plans for each deck showing—

(1) Each fire retardant bulkhead;

(2) Each fire detecting, manual alarm, and fire extinguishing system;

(3) Each fire door;

(4) Each means of ingress to compartments; and

(5) Each ventilating system, including the location of each damper, fan, and remote means of stopping the fans.

(b) The stability letter issued by the Coast Guard.

(c) Each SOLAS and Coast Guard certificate issued to the unit.

§ 109.564 Maneuvering characteristics.

(a) The master or person in charge of each self-propelled unit of 1,600 gross tons and over shall ensure that a maneuvering information fact sheet is prominently displayed in the pilothouse.

(b) For surface type units, the maneuvering information in Part 97.19 of this chapter must be displayed.

(c) The maneuvering information requirements for column stabilized, self-elevating, and other units of unusual design will be specified on a case by case basis.

§ 109.565 Charts and nautical publications.

(a) The master or person in charge of a self-propelled unit shall ensure that the unit has the following:

(1) Charts.

(2) Sailing directions.

(3) Coast pilots.

(4) Light lists.

(5) Notices to mariners.

(6) Tide tables.

(7) Current tables.

(8) All other nautical publications necessary.[1]

NOTE 1.—For U.S. units in or on the navigable waters of the United States, see 33 CFR 164.33.

(b) The master or person in charge shall ensure that the items required in paragraph (a) are adequate, up-to-date, and appropriate for the intended voyage of the unit.

§ 109.573 Riveting, welding, and burning operations.

Except as allowed by this section—

(a) The master or person in charge shall ensure that there is no riveting, welding, or burning—

(1) In a fuel tank;

(2) On the boundary of a fuel tank;

(3) On pipelines, heating coils, pumps, fittings, or other appurtenances connected to fuel tanks; or

(4) On the boundary of spaces adjacent to tanks carrying Grades A, B, or C flammable liquids in bulk.

(b) The operations prohibited in paragraph (a) of this section may be allowed if—

(1) An inspection conducted in accordance with the "Standard for the Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, is made—

(i) In ports or navigable waters of the United States, its territories and possessions, by—

(A) A marine chemist certified by the National Fire Protection Association; or

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(ii) In all other locations by—

(A) A marine chemist certified by the National Fire Protection Association;

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(C) If the persons required in paragraph (b) (ii) (A) and (B) are not available, the master or person in charge, or welding supervisor designated, in writing; and

(2) A certificate is issued by the person conducting the inspection stating—

(i) That he conducted the inspection in accordance with the standard in paragraph (b) (1);

(ii) The operations that may be conducted; and

(iii) A list of precautions to be followed during the operations;

(c) The master or person in charge shall ensure that the precautions in paragraph (b) (2) (iii) are followed.

§ 109.575 Accumulation of liquids on helicopter decks.

The master or person in charge shall ensure that no liquids are allowed to accumulate on the helicopter decks.

§ 109.577 Helicopter fueling.

(a) The master or person in charge shall designate persons to conduct helicopter fueling operations.

(b) No person may be designated to conduct such operations unless he is familiar with the fueling procedures and safety precautions.

§ 109.581 Fixed ballast.

(a) The master or person in charge shall ensure that fixed ballast is not removed from the unit or relocated unless the removal or relocation is approved by the Commandant.

(b) Fixed ballast may be moved for examination or repair of the unit if done in the presence of a marine inspector.

§ 109.583 Prevention of oil pollution.

The master or person in charge shall ensure that the unit is operated to meet the requirements in—

(a) Section 311 of the Federal Water Pollution Control Act, as amended (86 Stat. 816; 33 U.S.C. 1321);

(b) Section 12 of the Oil Pollution Act, 1961, as amended (75 Stat. 404; 33 U.S.C. 1011); and

(c) 33 CFR Parts 151, 155 and 156.

§ 109.585 Use of auto pilot.

Except as provided in 33 CFR 164.15, when the automatic pilot is used in areas of high traffic density, conditions of restricted visibility, and all other hazardous navigational situations, the master or person in charge shall ensure that—

(a) It is possible to immediately establish manual control of the unit's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under the supervision of, the officer of the watch.

§ 109.587 Use of sleeping spaces.

The master or person in charge of a self-elevating unit shall ensure that no accommodation space below the main deck used as a sleeping space is used when the unit is in the floating condition.

(Sec. 2, 87 Stat. 418 (46 U.S.C. 86), sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367), R.S. 4405, as amended (46 U.S.C. 375), R.S. 4423, as amended (46 U.S.C. 400), R.S. 4429, as amended (46 U.S.C. 407), R.S. 4430, as amended (46 U.S.C. 408), 88 Stat. 423 (46 U.S.C. 411), R.S. 4434, as amended (46 U.S.C. 412), R.S. 4462, as amended (46 U.S.C. 416), sec. 1, 73 Stat. 475 (46 U.S.C. 481), sec. 4, 67 Stat. 462 (43 U.S.C. 1333(e)); 49 CFR 1.46(b) and (n)(6).)

NOTE.—The Coast Guard has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11821, as amended, and OMB Circular A-107.

Dated: April 22, 1977.

O. W. SILER,
Admiral, U.S. Coast Guard,
Commandant.

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